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CATALOGUE

OF THE

LEPIDOPTERA PHALÆNÆ

IN THE

BRITISH MUSEUM.

(Nat Hist) Dept. of Zoology

VOLUME IX.

LONDON:
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National Museum.

CATALOGUE

OF THE

NOCTUIDÆ

IN THE

COLLECTION

OF THE

BRITISH MUSEUM.

BY

SIR GEORGE F. HAMPSON, BART.

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PREFACE.

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The subject of Vol. IX. of the 'Catalogue of Moths' is the third and final part of the very large Noctuid subfamily *Acronyctinæ*; it contains 725 species belonging to 185 genera as compared with 843 species belonging to 96 genera in Vol. VII., and 720 species belonging to 104 genera in Vol. VIII.

The comparatively short list of unrecognised species belonging to the subfamily, at the end of the Volume, is evidence of the ready help given to Sir George Hampson by the loan of types and specimens by Entomologists interested in the subject.

A large proportion of the species included in this list were described by the older authors and the types are lost.

Plate CXLVIII. will appear with Vol. X. of the Catalogue.

SIDNEY F. HARMER,
Keeper of Zoology.

British Museum (Natural History),
January 21st, 1910.

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CATALOGUE

OF

LEPIDOPTERA PHALÆNÆ.

Family NOCTUIDÆ.

Subfamily ACRONYCTINÆ (*continued*).

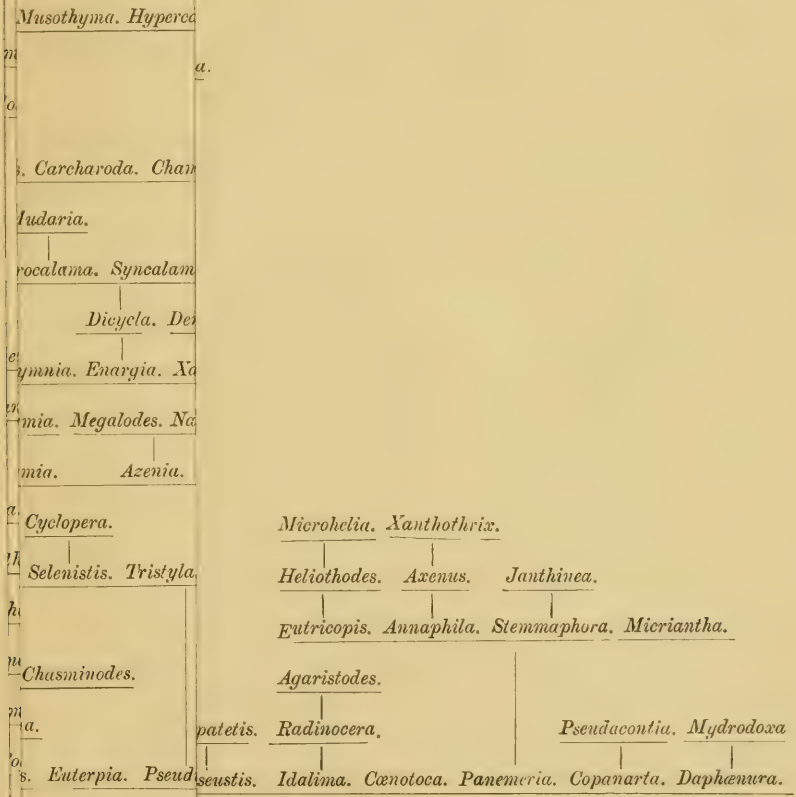
The key to the Genera is reprinted, with some additions and corrections, from Vol. VIII. of the Catalogue, with the references to the pages of the present volume inserted with the figure (3) before them.

Key to the Genera.

A. Fore wing without an areole.
  a. Fore wing with vein 7 stalked with 8, 9.
    a^1. Fore wing with vein 10 stalked with 8, 9, or 9 absent.
      a^2. Frons with pointed corneous process ..... PACHYLEPIS, (3) p. 512.
      b^2. Frons with rounded prominence with raised edges.
        a^3. Proboscis absent; hind wing with vein 8 anastomosing with the cell to middle, then approximated to it to extremity ... STOMAFRONTIA, (2) p. 223.
        b^3. Proboscis fully developed.
          a^4. Hind wing with vein 8 approximated to the cell to middle ..... [(2) p. 224. CEPHALOSPARGITA,
          b^4. Hind wing with vein 8 anastomosing with the cell near base only.
            a^5. Palpi upturned ..... PROMETOPUS, (2) p. 367.
            b^5. Palpi porrect ..... ETHIOTERPIA, (3) p. 112.
      c^2. Frons with slight rounded prominence.
        a^3. Abdomen with dorsal crest at base ..... EMARGINEA, (3) p. 112.
        b^3. Abdomen without crests ..... MICRAPATETIS, (3) p. 451.
      d^2. Frons without prominence.
        a^3. Abdomen with dorsal series of crests.
          a^4. Fore wing with the termen angled at middle ..... NEOPISTRIA, p. 530.
          b^4. Fore wing with the termen evenly curved.
            a^5. Fore wing with vein 9 absent ..... CINGALESA, (2) p. 561.
            b^5. Fore wing with vein 9 present ..... ARBORICORNIS, p. 358.
        b^3. Abdomen without crests.
          a^4. Fore wing with vein 9 absent; metathorax with paired crests ..... NEOLAPHYGMA, (2) p. 266.
          b^4. Fore wing with vein 9 present.
            a^5. Proboscis aborted, small ..... NEOLITA, (3) p. 307.
            b^5. Proboscis fully developed.
              a^6. Metathorax with spreading crest.
                a^7. Palpi fringed with long hair in front. PHOBOLOSIA, (3) p. 525.
                b^7. Palpi fringed with scales in front ... NEOSTROTIA, (2) p. 562.
              b^6. Metathorax without crest.
                a^7. Tarsi with the 1st joint tufted with scales ..... LOPHOTARSIA, (2) p. 268.

b^7. Tarsi with the 1st joint not tufted with scales.
a^8. Fore wing with the termen angled at vein 4 ..... GONELYDNA, (3) p. 527.
b^8. Fore wing with the termen oblique below vein 3 ..... [(3) p. 177. CLOSTEROMORPHA,
b^1. Fore wing with vein 10 from the cell.
a^2. Abdomen with dorsal series of crests.
a^3. Pro- and metathorax with spreading crests.
a^4. Proboscis aborted, minute ..... NEOMONODES, (2) p. 564.
b^4. Proboscis fully developed ..... FRACARA, p. 600.
b^3. Thorax without crests ..... CHASMINODES, (3) p. 349.
b^2. Abdomen with dorsal crest at base only.
a^3. Fore wing with the termen angled at vein 4. GONOSTYGIA, (3) p. 124.
b^3. Fore wing with the termen strongly excurved at middle ..... NEOCALYMNIA, (3) p. 178.
c^2. Abdomen without crests.
a^3. Frons with rounded prominence ..... XENOPSEUSTIS, (3) p. 455.
b^3. Frons without prominence.
a^4. Palpi upturned ..... MICROMONODES, (2) p. 565.
b^4. Palpi porrect, about three times length of head ..... RHYNCHOLITA, (3) p. 307.
b. Fore wing with veins 8, 9, 10 stalked, 7 from cell.
a^1. Eyes small, reniform.
a^2. Frons with trilobate process ..... JANTHINEA, (3) p. 483.
b^2. Frons with rounded prominence with raised edges and central process.
a^3. Palpi upturned ..... MICRIANTHA. (3) p. 486.
b^3. Palpi porrect ..... APAUSTIS, (3) p. 469.
b^1. Eyes large, round.
a^2. Frons with transverse corneous plate ..... XANTHOLEPIS, (3) p. 513.
b^2. Frons smooth.
a^3. Fore wing with the termen angled at vein 4. LEUCOSIGMA, (3) p. 127.
b^3. Fore wing with the termen not angled at vein 4.
a^4. Abdomen with dorsal crests on basal segments ..... BORBOTANA, p. 584.
b^4. Abdomen with dorsal crest at base only. NOLASODES, (3) p. 523.
c. Fore wing with veins 8, 9 stalked, 7 and 10 from cell.
a^1. Frons with bifid corneous plate from middle; abdomen without crests ..... EUTERPIODES, (3) p. 394.
b^1. Frons with rounded prominence; abdomen with dorsal crests on basal segments ..... MUSOTHYMA, (3) p. 186.
B. Fore wing with areole.
a. Fore tibia with one or more claws on outer side.
a^1. Frons with heart-shaped corneous prominence ..... POLENTA, (3) p. 249.
b^1. Frons with trilobate process ..... NARTHECOPHORA, (3) p. 374.
c^1. Frons smooth ..... CENTROPODIA, p. 452.
b. Fore tibia with small claws at inner and outer sides; frons with pointed prominence connected by a keel with the trilobate plate below it which is produced to lateral points below. PARÆGLE, (3) p. 379.
c. Fore tibia with large semilunar plate at extremity, and large and small claws on inner side ..... TRIOCNEMIS, (3) p. 395.
d. Fore tibia with long curved claw on inner side and two claws on outer ..... DERRIMA, (3) p. 241.
e. Fore tibia with long curved claw on inner side and small claw on outer.
a^1. Frons with truncate prominence with raised edges ..... PLAGIOMIMICUS, (3) p. 250.
b^1. Frons smooth, with corneous plate below it. PSEUDACONTIA, (3) p. 489.

[*To face* p. 2.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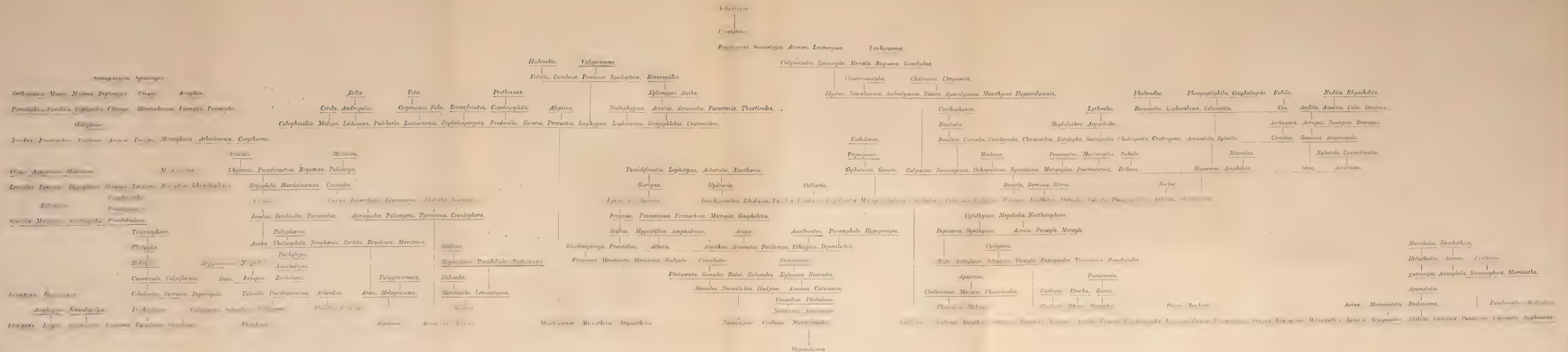
Judaria.
rocalama. Syncalam
Dicycla. De
ymnia. Enargia. Xa
mia. Megalodes. Na
mia. Azenia.
Cyclopera.
Selenistis. Tristyla.
Chasminodes.
a.
s. Euterpia. Pseud
patetis.
seustis.
Microhelia. Xanthothrix.
Heliothodes. Axenus. Janthinea.
Eutricopis. Annaphila. Stemmaphora. Micriantha.
Agaristodes.
Radinocera.
Idalima. Cœnotoca. Panemeria.
Pseudacontia. Mydrodoxa
Copanarta. Daphænura.

PHYLOGENY OF THE ACRONYCTINÆ.

. To face p. 2



f. Fore tibia with claw on inner side only.
a[1]. Frons with shovel-shaped plate at middle and corneous plate below it ..... PINACOPLUS, (3) p. 229.
b[1]. Frons with pointed prominence with trilobate plate below it ..... METÆGLE, (3) p. 379.
c[1]. Frons with corneous prominence with raised edges and central process.
a[2]. Proboscis aborted ..... CENTROGONE, (3) p. 223.
b[2]. Proboscis fully developed.
a[3]. Eyes small, reniform ..... XANTHOTHRIX, (3) p. 467.
b[3]. Eyes large, round.
a[4]. Thorax clothed with rough scales; pro- and metathorax with crests; patagia curled upwards at extremity.
a[5]. Fore tibia with the claw strong ..... CHALCOPASTA, (3) p. 218.
b[5]. Fore tibia with fine spine ..... HOPLOLYTHRA, (3) p. 214.
b[4]. Thorax smoothly clothed with scales.
a[5]. Pro- and metathorax with slight crests. FOTA, (2) p. 214.
b[5]. Pro- and metathorax without crests ... ANTAPLAGA, (3) p. 384.
c[4]. Thorax clothed with hair and hair-like scales ..... CALOPHASIDIA, (2) p. 181.
d[4]. Thorax clothed with hair only, the pro- and metathorax with spreading crests... FALA, (2) p. 220.
d[1]. Frons with corneous prominence with raised edges, its lower edge produced to a point.
a[2]. Fore wing with the apex produced and acute. STIRIA, (3) p. 242.
b[2]. Fore wing with the apex round ..... CIRRHOPHANUS, (3) p. 201.
e[1]. Frons with corneous prominence with raised edges not produced to a point.
a[2]. Proboscis aborted, minute ..... METOPOPLUS, (3) p. 229.
b[2]. Proboscis fully developed.
a[3]. Fore wing with the termen excurved at middle and oblique towards tornus ..... BASILODES, (3) p. 206.
b[3]. Fore wing with the termen evenly curved. STIBADIUM, (3) p. 104.
f[1]. Frons with rounded prominence with corneous plate below it ..... XANTHIRIA, (3) p. 244.
g[1]. Frons without prominence.
a[2]. Proboscis aborted, small.
a[3]. Pro- and metathorax with spreading crests. PSEUDOLIGIA, (2) p. 170.
b[3]. Prothorax without crest, metathorax with large crest ..... OXYCNEMIS, (2) p. 215.
b[2]. Proboscis fully developed.
a[3]. Thorax smoothly clothed with scales.
a[4]. Pro- and metathorax with spreading crests ..... COPANARTA, (3) p. 492.
b[4]. Thorax without crests ..... LEUCOCNEMIS, (2) p. 221.
b[3]. Thorax roughly clothed with hair and hair-like scales ..... CENTRARTHRA, (2) p. 284.
g. Fore tibia without claws.
a[1]. Fore tarsus with curved claw-like spines on outer side of 1st joint.
a[2]. Frons with truncate conical prominence with raised edges.
a[3]. Proboscis aborted, small; abdomen with dorsal crest at base only ..... MYCTEROPLUS, (3) p. 231.
b[3]. Proboscis fully developed; abdomen without crests.
a[4]. Thorax clothed chiefly with scales, the metathorax with paired crests ..... OMPHALETIS, (2) p. 374.
b[4]. Thorax clothed with hair only and without crests ..... PSECTROTARSIA, (3) p. 232.
b[2]. Frons with rounded prominence with corneous plate below it; proboscis aborted.

a^3. Frons with the prominence roughened in front ..... PSEUDAMATHES, (3) p. 507.
b^3. Frons with the prominence not roughened in front ..... MICROPIA, (2) p. 373.
c^2. Frons with vertical ridge.
a^3. Abdomen with dorsal crest at base only... CALLARGYRA, p. 515.
b^3. Abdomen without crests ..... SCOTOCAMPA, (2) p. 171.
d^2. Frons without prominence.
a^3. Proboscis aborted, minute ..... PSEUDOPSEUSTIS, (3) p. 508.
b^3. Proboscis fully developed.
a^4. Prothorax with sharp ridge-like crest, metathorax with spreading crest; abdomen with basal crest..... RHODŒCIA, (3) p. 51.
b^4. Pro- and metathorax with spreading crests; abdomen without crests ..... PSEUDOHADENA, p. 454.
b^1. Fore tarsus without claw-like spines on outer side of 1st joint.
a^2. Frons with truncate corneous prominence with raised edges, its lower edges produced to a trilobate plate with corneous plate below it.
a^3. Thorax clothed chiefly with scales ..... CYTOTHYMIA, (3) p. 370.
b^3. Thorax clothed with rough hair and hair-like scales ..... MEGALODES, (3) p. 373.
b^2. Frons with long trilobate process and corneous plate below it.
a^3. Proboscis aborted, small.
a^4. Palpi oblique, reaching to beyond frons. AZENIA, (3) p. 375.
b^4. Palpi porrect, very short ..... PSEUDINODES, (3) p. 396.
b^3. Proboscis fully developed.
a^4 Eyes small, reniform ..... STEMMAPHORA, (3) p. 485.
b^4. Eyes large, round.
a^5. Palpi extending to just beyond frons.
a^6. Metathorax with spreading crests ... TRISTYLA, (3) p. 393.
b^6. Thorax without crests.
a^7. Fore wing with vein 10 anastomosing with 8 to form the areole ..... CARCHARODA, (3) p. 211.
b^7. Fore wing with vein 9 from 10 anastomosing with 8 to form the areole. MUDARIA, (3) p. 225.
b^5. Palpi very short and not reaching as far as frons ..... SYNTHYMIA, (3) p. 372.
c^1. Frons with long bilobate corneous process.
a^3. Proboscis aborted, small.
a^4. Frons with long triangular plate below it. PROTHRINAX, (2) p. 225.
b^4. Frons with short plate below it excised in front.
a^5. Thorax clothed with hair and scales, the pro- and metathorax with spreading crests ..... STILBINA, (2) p. 168.
b^5. Thorax clothed almost entirely with scales and without crests ..... CYCLOPERA, (3) p. 389.
c^5. Thorax clothed with hair and hair-like scales and without crests ..... OCHROCALAMA, (3) p. 226.
c^4. Frons without plate below it ..... ARCHANARA, (3) p. 292.
b^3. Proboscis fully developed.
a^4. Metathorax with spreading crest ..... DIPINACIA, (3) p. 370.
b^4. Metathorax without crest ..... ÆGLE, (3) p. 380.
d^2. Frons with rounded prominence with shovel-shaped process at middle and corneous plate below it.
a^3. Proboscis absent ..... HYPEUTHINA, (2) p. 169.
b^3. Proboscis aborted, small.
a^4. Frons with the corneous process somewhat pointed at extremity and keeled below ..... DIPAROPSIS, p. 509.

b^4. Frons with the corneous process not pointed or keeled.
a^5. Palpi upturned ..... AMEFRONTIA, (2) p. 417.
b^5. Palpi obliquely porrect ..... STIRIODES, (3) p. 245.
c^3. Proboscis fully developed.
a^4. Eyes small, reniform ..... APINA, (3) p. 449.
b^4. Eyes large, round.
a^5. Thorax clothed chiefly with scales.
a^6. Frons with trilobate plate below it; hind wing with veins 3, 4 from cell... COPIBRYOPHILA, (2) p. 226.
b^6. Frons with triangular plate below it; hind wing with veins 3, 4 stalked ... PRODICELLA, (2) p. 227.
c^6. Frons with the corneous plate below it excised in front; hind wing with vein 5 from well below middle of cell. ALEPTINA, (2) p. 229.
b^5. Thorax clothed with hair only ..... IPANICA, (3) p. 450.
c^2. Frons with truncate conical prominence with raised edges.
a^3. Abdomen with dorsal crests on basal segments.
a^4. Proboscis aborted, minute.
a^5. Fore wing with the termen and cilia strongly dentate ..... CETOLA, (2) p. 182.
b^5. Fore wing with the termen and cilia slightly crenulate..... ATREPHES, p. 284.
b^4. Proboscis fully developed.
a^5. Thorax with slight double ridge-like crest ..... STAUROPIDES, (2) p. 269.
b^5. Pro- and metathorax with spreading crests ..... SPEOCROPIA, p. 255.
c^5. Prothorax without crest, metathorax with large spreading crest ..... EUDRYAS, (3) p. 401.
d^5. Thorax without crests.
a^6. Thorax clothed with rough hair and scales mixed ..... PARATUERTA, (3) p. 414.
b^6. Thorax clothed with hair and hair-like scales.
a^7. Palpi upturned ..... SEUDYRA, (3) p. 429.
b^7. Palpi porrect ..... GERRA, (3) p. 416.
b^3. Abdomen with dorsal crest at base only.
a^4. Prothorax with spreading crest.
a^5. Frons with flattened vertical process to the frontal prominence ..... RUACODES, (2) p. 537.
b^5. Frons with long central process hollowed out in front to the frontal prominence.
a^6. Proboscis aborted, minute ..... SYNCALAMA, (3) p. 228.
b^6. Proboscis fully developed ..... HADENELLA, (2) p. 231.
c^5. Frons without central process to the frontal prominence.
a^6. Proboscis aborted ..... ECBOLEMIA, p. 448.
b^6. Proboscis fully developed.
a^7. Hind wing with vein 5 from middle of discocellulars ..... CATAMECIA, (2) p. 540.
b^7. Hind wing with vein 5 from below middle of discocellulars.
a^8. Frontal prominence large ..... PROCRATERIA, (2) p. 533.
b^8. Frontal prominence small ..... HYPOPERIGEA, (2) p. 422.
b^4. Prothorax without crest.
a^5. Frons with truncate process in middle of prominence ..... NOCLOA, (3) p. 253.
b^5. Frons without truncate process in middle of prominence.
a^6. Proboscis aborted, small ..... OSLARIA, (3) p. 257.
b^6. Proboscis fully developed.
a^7. Frontal prominence large.

a^8. Palpi upturned.
a^9. Mesothorax with paired crests ... IAMBIODES, p. 659.
b^9. Mesothorax without crest ..... APOCALYMNIA, (3) p. 184.
b^8. Palpi porrect.
a^9. Eyes small, reniform ..... AGARISTODES, (3) p. 456.
b^9. Eyes large, round.
a^{10}. Thorax clothed with hair and scales mixed.
a^{11}. Patagia fringed with long rough hair and scales ..... OVIOS, (3) p. 426.
b^{11}. Patagia normal.
a^{12}. Abdomen with fan-like crest formed of scales ..... RADINOCERA, (3) p. 458.
b^{12}. Abdomen with tufted crest formed of hairs ..... EROCHA, (3) p. 407.
b^{10}. Thorax clothed with hair only.
a^{11}. Patagia with the extremities turned upwards, the metathorax with paired crests ..... GERRODES, (3) p. 418.
b^{11}. Patagia normal ..... CAULARIS, (3) p. 405.
b^7. Frontal prominence very small.
a^8. Palpi upturned ..... THALATHA, (2) p. 42.
b^8. Palpi porrect, the 3rd joint downturned and dilated at extremity ... LEUCOGONIA, (3) p. 446.
c^3. Abdomen without dorsal crests.
a^4. Eyes small, reniform.
a^5. Frontal prominence with its lower edge produced to a corneous plate ..... AXENUS, (3) p. 471.
b^5. Frontal prominence with its lower edge not produced to a corneous plate.
a^6. Frontal prominence with central process ..... MICROHELIA, (3) p. 463.
b^6. Frontal prominence without central process ..... HELIOTHODES, (3) p. 464.
b^4. Eyes large, round.
a^5. Frons with beak-shaped process from lower edge of prominence ..... CYTOCANIS, (3) p. 110.
b^5. Frons with flattened plate from lower edge of prominence, grooved in front. CALLŒCIA, (3) p. 56.
c^5. Frons with wedge-shaped process in middle of prominence ..... BASILICA, (3) p. 209.
d^5. Frons with rounded truncate process in middle of prominence.
a^6. Palpi upturned ..... CIRRODES, (3) p. 210.
b^6. Palpi short, upturned..... SELENISTIS, (3) p. 392.
e^5. Frons with vertical ridge in middle of prominence.
a^6. Fore tarsi short, the ungues large.
a^7. Frontal ridge forming a large vertical plate ..... LYTHRODES, (3) p. 214.
b^7. Frontal ridge slight ..... ARGYRIODA, (3) p. 216.
b^6. Fore tarsi normal ..... CHAMAECLEA, (3) p. 211.
f^5. Frons without process in middle of prominence.
a^6. Frontal prominence long.
a^7. Thorax clothed with hair and scales mixed; abdomen smoothly scaled.
a^8. Palpi upturned, the 3rd joint porrect. IDALIMA, (3) p. 459.
b^8. Palpi porrect.
a^9. Proboscis absent.
a^{10}. Prothorax with spreading crest . RABILA, (3) p. 279.
b^{10}. Prothorax without crest ..... EREMOCHROA, (2) p. 370.
b^9. Proboscis aborted, minute; frontal prominence indented below ..... ESCARIA, (2) p. 228.
c^9. Proboscis fully developed.
a^{10}. Frons with pointed corneous plate below it ..... MOLYÆNA, (3) p. 357.

b^{10}. Frons without corneous plate below it ..... Rhosus, (3)p. 411.
b^{7}. Thorax clothed with hair only; abdomen clothed with rough hair.
a^{8}. Palpi upturned ..... Aucula, (3)p. 419.
b^{8}. Palpi porrect ..... Leucovis, (3)p. 428
b^{6}. Frontal prominence short.
a^{7}. Thorax with broad dorsal ridge of scales.
a^{8}. Frons with the corneous prominence large..... Paracrorja, (2)p. 281
b^{8}. Frons with the corneous prominence small ..... Thyatirodes, (2)p. 282.
b^{7}. Pro- and metathorax with spreading crests.
a^{8}. Proboscis aborted, minute..... Omphalagria, (3)p. 272.
b^{8}. Proboscis fully developed ..... Hypercalymnia,(3)p.185.
c^{7}. Metathorax with depressed crest; hind wing with veins 3, 4 stalked ... Paromphale, (2)p. 421.
d^{7}. Thorax without crests.
a^{8}. Palpi with the 2nd joint reaching vertex of head; thorax clothed with hair and hair-like scales ..... Stygiathetis, (2)p. 444.
b^{8}. Palpi with the 2nd joint reaching middle of frons; thorax clothed with hair and scales mixed.
a^{9}. Palpi upturned, slender; fore wing with the termen excurved at middle and oblique towards tornus ..... Satrapodes, (3)p 217.
b^{9}. Palpi oblique, short; fore wing with the termen evenly curved ... Dysmilichia, (2)p. 426.
f^{2}. Frons with pointed prominence.
a^{3}. Eyes small, reniform ..... Psychomorpha, (3)p. 424.
b^{3}. Eyes large, round.
a^{4}. Abdomen with dorsal crests on basal segments.
a^{5}. Proboscis aborted, minute ..... Achatodes, (3)p. 30.
b^{5}. Proboscis fully developed ..... Cœnotoca, (3)p. 462.
b^{4}. Abdomen with dorsal crest at base only.
a^{5}. Prothorax with sharp triangular ridge-like crest, the metathorax with divided crest ..... Xanthœcia, (3)p. 32.
b^{5}. Prothorax with divided crest, metathorax with spreading crest .... Xerociris. (3)p. 400.
c^{5}. Thorax without crests.
a^{6}. Frons with beak-like pointed process; palpi with the 2nd joint very broadly scaled ..... Apsarasa, (3)p. 344.
b^{6}. Frons with slight pointed prominence; palpi slender.
a^{7}. Palpi upturned ..... Mazuca, (3)p. 347.
b^{7}. Palpi porrect ..... Protoseudyra, (3)p. 443.
c^{4}. Abdomen without crests.
a^{5}. Proboscis aborted, minute ..... Conicofrontia, (3)p. 338.
b^{5}. Proboscis fully developed.
a^{6}. Thorax clothed almost entirely with scales ..... Microlita, (3)p. 302.
b^{6}. Thorax clothed with hair and hair-like scales ..... Cœnobia, (3)p. 300.
g^{2}. Frons with rounded prominence with transverse corneous plate at middle square in front ..... Phragmatiphila, [(3)p. 266.
h^{2}. Frons with rounded prominence with vertical ridge at middle.
a^{3}. Abdomen with dorsal series of crests..... Eucropia, p. 286.
b^{3}. Abdomen with dorsal crest at base only.
a^{4}. Palpi upturned ..... Pariambia, p. 660.

b^4. Palpi porrect ..... METAXANTHIA, (3) p. 448.
c^3. Abdomen without crests ..... CHRYSOECIA, (3) p. 182.
i^2. Frons with rounded prominence with slight transverse ridge.
a^3. Frons with corneous plate below it.
a^4. Abdomen with dorsal crests on first two segments ..... CHALCOECIA, (3) p. 182.
b^4. Abdomen without crests ..... PRORACHIA, (2) p. 230.
b^3. Frons without corneous plate below it ... ŒDIPLEXIA, p. 218.
j^2. Frons with rounded prominence.
a^3. Abdomen with dorsal crests on basal segments.
a^4. Proboscis absent.
a^5. Pro- and metathorax with spreading crests ..... TUMIDIFRONTIA, (3) p. 18.
b^5. Pro- and metathorax without crests ... MIONIDES. p. 616.
b^4. Proboscis fully developed.
a^5. Pro- and metathorax with spreading crests ..... ŒDEREMIA, p. 405.
b^5. Pro- and metathorax without crests.
a^6. Thorax smoothly clothed with scales only ..... GOENYCTA, (2) p. 49.
b^6. Thorax clothed with rough hair and scales mixed ..... ZALISSA, (3) p. 441.
b^3. Abdomen with dorsal crest at base only.
a^4. Prothorax with spreading crest.
a^5. Fore wing with the termen oblique towards tornus.
a^6. Fore wing with scale-tooth at tornus . ECTOLOPHA, (3) p. 212.
b^6. Fore wing without scale-tooth at tornus ..... XYLOMŒA, (2) p. 534.
b^5. Fore wing with the termen evenly curved.
a^6. Build stout.
a^7. Fore wing with the termen crenulate. AMIANA, (2) p. 538.
b^7. Fore wing with the termen not crenulate ..... MATOPO, (2) p. 185.
b^6. Build slender ..... NEOMILICHIA, (2) p. 518.
b^4. Prothorax without crest.
a^5. Thorax clothed chiefly with scales.
a^6. Fore wing with the apex produced, the termen obliquely curved ..... FOTELLA, (2) p. 232.
b^6. Fore wing with the apex not produced, the termen more erect.
a^7. Antennæ laminate, almost simple ... TYCRACONA, (2) p. 50.
b^7. Antennæ ciliated.
a^8. Fore wing narrow, the margins subparallel ..... BRYOLYMNIA, (3) p. 119.
b^8. Fore wing triangular ..... TRICHOCOSMIA. (3) p. 153.
b^5. Thorax clothed with hair only ..... ERYTHRŒCIA, (3) p. 57.
c^3. Abdomen without dorsal crests.
a^4. Eyes small, elliptical.
a^5. Thorax clothed with rough hair and scales. ANNAPHILA, (3) p. 472.
b^5. Thorax smoothly scaled ..... MESOTROSTA, (2) p. 437.
b^4. Eyes large, round.
a^5. Metathorax with crest.
a^6. Prothorax with spreading crest.
a^7. Proboscis absent ..... ACOPA, (2) p. 410.
b^7. Proboscis aborted, small ..... HÆMASSIA, (2) p. 438.
c^7. Proboscis fully developed ..... CEA, (3) p. 280.
b^6. Prothorax without crest.
a^7. Proboscis aborted, minute.
a^8. Thorax clothed with hair and scales mixed ..... LEIOMETOPON, (2) p. 172.
b^8. Thorax clothed with hair only ..... SPHIDA, (3) p. 259.
b^7. Proboscis fully developed..... RHABINOPTERYX, (2) p. 287.

b^5. Metathorax without crest.
a^6. Thorax clothed almost entirely with scales.
a^7. Proboscis aborted ..... Meroleuca, p. 687.
b^7. Proboscis fully developed.
a^8. Frons with corneous ridge above ... Neumœgenia, (3) p. 224.
b^8. Frons without corneous ridge above.
a^9. Fore wing with the apex rather produced and acute... ..... Xylostola, (2) p. 335.
b^9. Fore wing with the apex rounded. Acosmetia, (2) p. 412.
b^6. Thorax clothed with hair and hair-like scales .... Arcilasisa, (3) p. 338.
c^6. Thorax clothed with hair only..... Oxythires, (3) p. 367.
k^2. Frons with vertical flattened process with rounded edge.
a^3. Abdomen with dorsal series of crests..... Emboleœia, (3) p. 59.
b^3. Abdomen with dorsal crest at base only... Copifrontia, (3) p. 58.
l^2. Frons with transverse ridge.
a^3. Abdomen with dorsal series of crests ..... Antha, (2) p. 274.
b^3. Abdomen with dorsal crest at base only.
a^4. Pro- and metathorax with spreading crests .... Leuconycta, (2) p. 35.
b^4. Pro- and metathorax without crests..... Polygrammata, p. 689.
m^2. Frons smooth and without prominence.
a^3. Proboscis aborted or absent.
a^4. Abdomen with dorsal series of crests.
a^5. Prothorax without crest, metathorax with spreading crest ..... Bryomœa, p. 615.
b^5. Thorax without crests.
a^6. Palpi upturned, thickly scaled ..... Acherdoa, p. 591.
b^6. Palpi porrect, slender..... Poliobrya, p. 617.
b^4. Abdomen with dorsal crest at base only.
b^5. Thorax clothed almost entirely with scales.
a^6. Prothorax with divided crest..... Phalerodes, (3) p. 263.
b^6. Prothorax without crest.
a^7. Palpi with the 2nd joint reaching vertex of head ..... Plusilla, p. 590.
b^7. Palpi with the 2nd joint reaching about middle of frons..... Bryoleuca, p. 686.
b^5. Thorax clothed with hair and hair-like scales.
a^6. Pro- and metathorax with spreading crests ..... Calamistis, (3) p. 273.
b^6. Pro- and metathorax without crests.
a^7. Fore wing very narrow and produced at apex .... Eulonche, (2) p. 162.
b^7. Fore wing triangular ..... Merolonche, (2) p. 165.
c^4. Abdomen without crests.
a^5. Thorax clothed chiefly with scales.
a^6. Hind wing with vein 8 anastomosing with the cell to near extremity ..... Acylita, (3) p. 304.
b^6. Hind wing with vein 8 anastomosing with the cell to middle..... Doerriesa, (3) p. 323.
c^6. Hind wing with vein 8 anastomosing with the cell near base only.
a^7. Pro- and metathorax with spreading crests..... Ethiopica, (2) p. 418.
b^7. Pro- and metathorax without crests.
a^8. Palpi with the hair at extremity of 2nd joint produced to a point, the 3rd porrect..... ..... Dantona, (3) p. 312.
b^8. Palpi with the 2nd joint slightly fringed with hair in front.
a^9. Palpi with the 3rd joint porrect... Cilla, (3) p. 312.
b^9. Palpi with the 3rd joint upturned. Amolita, (3) p. 308.

b^5. Thorax clothed with hair and hair-like scales.
a^6. Pro- and metathorax with spreading crests.
a^7. Palpi upturned; fore wing with the termen not crenulate.
a^8. Fore wing with the termen oblique towards tornus ..... NONAGRIA, (3) p. 321.
b^8. Fore wing with the termen evenly curved..... SELICANIS, (3) p. 103.
b^7. Palpi porrect; fore wing with the termen crenulate..... MARGELANA, p. 449.
b^6. Thorax without crests.
a^7. Fore wing with the apex produced and acute; hind wing with veins 3, 4 usually stalked, 5 from below middle of discocellulars ..... ACRAPEX, (3) p. 314.
b^7. Fore wing with the apex not produced; hind wing with veins 3, 4 from cell, 5 from middle of discocellulars.
a^8. Palpi upturned; frons with large tuft of hair..... SPHETTA, (3) p. 291.
b^8. Palpi porrect; frons without tuft of hair .... PETILAMPA, (2) p. 414.
c^5. Thorax clothed with hair only.
a^6. Metathorax with spreading crest ..... BELLURA, (3) p. 260.
b^6. Thorax without crests.
a^7. Palpi upturned ..... SESAMIA, (3) p. 324.
b^7. Palpi porrect.
a^8. Fore wing with the apex produced and acute ..... SIMYRA, (2) p. 173.
b^8. Fore wing with the apex rounded... EOGENA, (2) p. 179.
b^3. Proboscis fully developed.
a^4. Abdomen with dorsal series of crests.
a^5. Thorax with double ridge-like crest.
a^6. Thorax clothed chiefly with scales.
a^7. Palpi with the 2nd joint broadly angled with hair in front ..... ORTHOGONICA, p. 45.
b^7. Palpi with the 2nd joint moderately fringed with hair in front.
a^8. Fore wing long and narrow, the termen not excised towards tornus.
a^9. Tegulæ produced at a slight dorsal ridge..... DELTA, (2) p. 190.
b^9. Tegulæ not produced to a dorsal ridge.
a^{10}. Frons tufted with hair.
a^{11}. Fore wing very narrow, the termen very obliquely curved. MAGUSA, p. 55.
b^{11}. Fore wing broader, the termen more erect ..... PARASTICHTIS, p. 76.
b^{10}. Frons smooth with a slight corneous plate below it ..... XYLOMYGES, (2) p. 271.
b^8. Fore wing shorter, the termen excised towards tornus.
a^9. Palpi with the 2nd joint reaching to about vertex of head ..... STENOPTERYGIA, p. 61.
b^9. Palpi with the 2nd joint reaching to about middle of frons.
a^{10}. Frons tufted with hair ..... DIPTERYGIA, p. 64.
b^{10}. Frons smoothly scaled ..... ACRORIA, (2) p. 276.
b^6. Thorax clothed with hair and hair-like scales ..... AGROPERINA, p. 398.
b^5. Thorax with broad ridge-like crest..... EURABILA, p. 109.
c^5. Prothorax with triangular crest.

a^6. Thorax clothed chiefly with scales ... LOPHOTYNA, (3) p. 19.
b^6. Thorax clothed with hair and hair-like scales ..... PULCHERIA, (2) p. 213.
c^6. Thorax clothed with hair only.
a^7. Fore wing with the termen excised below vein 4..... ..... TRIGONOPHORA, p. 486.
b^7. Fore wing with the termen evenly curved.
a^8. Abdomen with the crests mixed with scales ..... CHUTAPHA, p. 491.
b^8. Abdomen with the crests formed of hair only ..... HABRYNTIS, p. 498.
d^5. Pro-, meso- and metathorax with large divided crests ..... MANIA, p. 49.
e^5. Pro-and metathorax with divided crests.
a^6. Thorax clothed chiefly with scales.
a^7. Abdomen dorsally flattened ..... CHECUPA, p. 111.
b^7. Abdomen not dorsally flattened.
a^8. Fore wing with vein 5 nearly straight, from just below middle of discocellulars..... EUPLEXIDIA, p. 110.
b^8. Fore wing with vein 5 curved, from just above lower angle of cell ..... TRACHEA, p. 113.
b^6. Thorax clothed with hair and hair-like scales ..... PARATRACHEA, p. 216.
f^5. Prothorax with spreading crest, metathorax with divided crest ..... POLYPHÆNIS, p. 667.
g^5. Prothorax with long oblique flattened crest.
a^6. Metathorax with divided crest ..... PAPAIPEMA, (3) p. 60.
b^6. Metathorax with spreading crest ..... OGDOCONTA, (3) p. 89.
h^5. Pro- and metathorax with spreading crests.
a^6. Thorax clothed chiefly with scales.
a^7. Fore wing with slight scale-tooth at tornus.
a^8. Abdomen with long forked crest on 2nd segment ..... ARGYROSTROTIS, p. 517.
b^8. Abdomen without forked crest on 2nd segment.
a^9. Fore wing with the termen more or less angled at vein 4, then oblique ..... ERIOPUS, p. 531.
b^9. Fore wing with the termen angled at vein 3, then dentate ..... COSMODES, (2) p. 17.
c^9. Fore wing with the termen evenly curved, dentate ..... DATA, p. 526.
b^7. Fore wing without scale-tooth at tornus.
a^8. Palpi with the 3rd joint porrect.
a^9. Palpi with the 2nd joint reaching vertex of head, the 3rd long ..... ANCARA, p. 249.
b^9. Palpi with the 2nd joint reaching about middle of frons, the 3rd short.
a^{10}. Abdomen with large dorsal crest on 3rd segment ..... TELESILLA, p. 587.
b^{10}. Abdomen with the dorsal crests slight..... ANDROPOLIA, (2) p. 199.
b^8. Palpi with the 3rd joint upturned.
a^9. Palpi with the 3rd joint long and dilated at extremity.
a^{10}. Fore wing with the termen excurved at middle and excised towards tornus..... VESPOLA, (3) p. 423.

b^{10}. Fore wing with the termen evenly curved ..... CROPIA, p. 260.
b^{9}. Palpi with the 3rd joint very long, not dilated, in male tufted with long hair on inner side and recurved over head..... CORYTHURUS, p. 360.
c^{9}. Palpi with the 3rd joint shorter and not dilated.
a^{10}. Fore wing with the cilia strongly dentate towards tornus ..... PERIGEODES, p. 287.
b^{10}. Fore wing with the cilia slightly crenulate.
a^{11}. Palpi with the 2nd joint reaching vertex of head.
a^{12}. Abdomen with very large crests on 3rd and 4th segments; build slender ..... CHYTONIX, p. 600.
b^{12}. Abdomen with the crests on medial segments equal; build stout.
a^{13}. Thorax and fore wing roughly scaled ..... HETEROCHROMA, p. 271.
b^{13}. Thorax and fore wing smoothly scaled ..... PERIGEA, p. 292.
b^{11}. Palpi with the 2nd joint reaching about middle of frons.
a^{12}. Abdomen with large crest on 3rd segment; build stout ... EUPLEXIA, p. 219.
b^{12}. Abdomen with large crest on 4th segment; build slender... MICROPLEXIA, p. 354.
c^{12}. Abdomen with the crests on medial segments equal.
a^{13}. Fore wing with the apex rectangular and somewhat acute ..... GORTYNA, (3) p. 20.
b^{13}. Fore wing with the apex rounded ..... OLIGIA, p. 361.
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Prothorax with the crest long, mesothorax with small paired crests; abdomen with very large double crest at base .... ACRORIODES, (2) p. 279.
b^{7}. Abdomen without large double crest at base.
a^{8}. Tegulæ produced to a slight dorsal ridge ..... APAMEA, (3) p. 25.
b^{8}. Tegulæ not produced to a dorsal ridge.
a^{9}. Thorax quadrately scaled ..... LITHOMŒA, (2) p. 208.
b^{9}. Thorax not quadrately scaled.
a^{10}. Thorax clothed with long rough hair and hair-like scales .... DASEOCLETA, (2) p. 22.
b^{10}. Thorax smoothly clothed with hair and hair-like scales..... EREMOBIA, p. 409.
c^{6}. Thorax clothed with hair only ..... TRICHOPLEXIA, p. 482.
i^{5}. Prothorax without distinct crest.
a^{6}. Thorax clothed chiefly with scales.
a^{7}. Palpi with the 2nd joint reaching vertex of head, the 3rd long.
a^{8}. Palpi with the 3rd joint porrect ... PSEUDERASTRIA, p. 614.
b^{8}. Palpi with the 3rd joint upturned... BRYOPHILA, p. 618.
b^{7}. Palpi with the 2nd joint reaching about middle of frons, the 3rd short.

a^8. Abdomen with very large crest on 4th segment.
a^9. Metathorax with very large crest of long spatulate scales ..... HARRISIMEMNA, p. 648.
b^9. Metathorax with moderate crest ... CERMA, p. 651.
b^8. Abdomen with the crests small.
a^9. Fore wing with the termen oblique towards tornus ..... IAMBIA, p. 654.
b^9. Fore wing with the termen evenly curved.
a^{10}. Fore wing long and narrow.
a^{11}. Fore wing with the termen erect ..... CALOGRAMMA, (2) p. 238.
b^{11}. Fore wing with the termen obliquely curved ..... PRODENIA, (2) p. 240.
b^{10}. Fore wing short and broad ..... CRANIOPHORA, (2) p. 51.
b^6. Thorax clothed with hair and hair-like scales.
a^7. Mesothorax with paired crests, patagia curled upwards at extremity ..... CANNA, (2) p. 19.
b^7. Mesothorax without crests, patagia not curled upwards at extremity ... CONSERVULA, p. 499.
j^5. Thorax without crests.
a^6. Thorax clothed chiefly with scales.
a^7. Palpi smoothly scaled and flattened against frons; fore wing narrow with the margins subparallel..... CLETHRORASA, (3) p. 343.
b^7. Palpi not flattened against frons and with a tuft of scales at extremity of 2nd joint; fore wing triangular ... NEOPHÆNIS, p. 681.
b^6. Thorax clothed with hair and hair-like scales ..... FAGITANA, p. 592.
b^4. Abdomen with dorsal crest at base only.
a^5. Pro- and metathorax with divided crests..... CALPIFORMIS, p. 504.
b^5. Prothorax with sharp triangular crest, metathorax with divided crest ..... MACRONOCTUA, p. 431.
c^5. Prothorax with sharp triangular crest, metathorax with spreading crest ..... HYDRŒCIA, (3) p. 35.
d^5. Prothorax with ridge-like crest, metathorax with spreading crest ..... ANDROLYMNIA, (3) p. 179.
e^5. Thorax with slight dorsal ridge-like crest ..... PYRRHIA, (3) p. 52.
f^5. Pro- and metathorax with spreading crests.
a^6. Thorax clothed chiefly with scales.
a^7. Pro- and metathorax with the crests formed of very long spatulate scales.
a^8. Fore wing with the apex produced and acute ..... PŒCILOGRAMMA, [(3) p. 514.
b^8. Fore wing with the apex rounded... OPSYRA, (3) p. 443.
b^7. Prothorax with long flattened crest projecting backwards.
a^8. Fore wing with the termen excised below apex and excurved at middle. GERODA, (3) p. 93.
b^8. Fore wing with the termen evenly curved..... MACAPTA, (3) p. 96.
c^7. Prothorax with short spreading crest.
a^8. Mesothorax with slight paired crests ..... CRAMBODES, (2) p. 445.
b^8. Mesothorax without crests.
a^9. Palpi upturned, the 2nd joint reaching vertex of head.
a^{10}. Build slender.

a^{11}. Hind wing with vein 5 from middle of discocellulars.
a^{12}. Fore wing with the termen excised from apex to middle. GONODES, (2) p. 450.
b^{12}. Fore wing with the termen evenly curved.
a^{13}. Fore wing with the apex somewhat produced and acute ..... PLATYSENTA, (2) p. 447.
b^{13}. Fore wing with the apex rounded ..... MONODES, (2) p. 457.
b^{11}. Hind wing with vein 5 from below middle of discocellulars. HADJINA, (2) p. 521.
b^{10}. Build stout..... MONOPTYX, p. 432.
b^{9}. Palpi upturned, the 2nd joint reaching about to middle of frons.
a^{10}. Thorax roughly scaled ..... HYPOPLEXIA, p. 426.
b^{10}. Thorax smoothly scaled.
a^{11}. Palpi with the 3rd joint porrect.
a^{12}. Tegulæ produced to a slight dorsal ridge and hood ..... CATABENA, (2) p. 234.
b^{12}. Tegulæ normal ..... NAMANGANA, (2) p. 544.
b^{11}. Palpi with the 3rd joint upturned.
a^{12}. Fore wing with tufts of raised scales on the stigmata..... PHÆOPYRA, p. 19.
b^{12}. Fore wing without tufts of raised scales on the stigmata. EUROMŒA, p. 425.
c^{9}. Palpi obliquely porrect, extending about the length of head ..... BALSA, (2) p. 454.
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Palpi with the 3rd joint long and porrect ..... RHYNCHOPLEXIA, p. 433.
b^{7}. Palpi with the 3rd joint short.
a^{8}. Palpi with the 2nd joint reaching to about vertex of head, build slender. TÆNIOSEA, p. 430.
b^{8}. Palpi with the second joint reaching to about middle of frons.
a^{9}. Fore wing with the apex produced and acute ..... CHIRIPHA, (2) p. 237.
b^{9}. Fore wing with the apex rounded.
a^{10}. Fore wing with the termen oblique towards tornus ..... HERÆMA, p. 429.
b^{10}. Fore wing with the termen not oblique towards tornus .. .. SIDEMIA, p. 435.
c^{6}. Thorax clothed with hair only ..... LASIPLEXIA, p. 483.
g^{5}. Prothorax without crest, metathorax with spreading crest.
a^{6}. Thorax clothed almost entirely with scales.
a^{7}. Palpi with the 2nd joint reaching vertex of head ..... AUCHA, p. 661.
b^{7}. Palpi with the 2nd joint reaching about middle of frons.
a^{8}. Fore tibia broadly fringed with hair; fore wing rather broad ..... SPODOPTERA, (2) p. 251.
b^{8}. Fore tibia slightly fringed with hair; fore wing long and narrow ..... LAPHYGMA, (2) p. 258.
b^{6}. Thorax clothed with hair and hair-like scales ..... COBALIODES, p. 505.
h^{5}. Thorax without crests.
a^{6}. Palpi with the 2nd joint reaching vertex of head.

a^7. Hind wing with vein 5 from middle of discocellulars.
a^8. Palpi with the 3rd joint long ..... POLIONYCTA, (2) p. 41.
b^8. Palpi with the 3rd joint short ..... GALGULA, (2) p. 439.
b^7. Hind wing with vein 5 from below middle of discocellulars.
a^8. Palpi with the 2nd joint flattened against frons ..... CHASMINA, (3) p. 351.
b^8. Palpi with the 2nd joint cylindrical. BAGISARA, (3) p. 154.
b^6. Palpi with the 2nd joint not reaching above middle of frons, the 3rd short.
a^7. Antennæ laminate and almost simple.
a^8. Fore wing with the inner margin somewhat excised towards tornus... EULYMNIA, (3) p. 111.
b^8. Fore wing with the inner margin not excised towards tornus ..... ACRONYCTA, (2) p. 59.
b^7. Antennæ ciliated.
a^8. Thorax clothed chiefly with scales . AGRIOPODES, (2) p. 37.
b^8. Thorax clothed with hair only ..... EUTERPIA, (3) p. 368.
c^4. Abdomen without dorsal crests.
a^5. Thorax with dorsal ridge-like crest; frons with projecting corneous plate below it..... ECCLETA, p. 685.
b^5. Prothorax with triangular crest; metathorax with double ridge-like crest.
a^6. Fore wing with the termen strongly excurved at middle ..... BRACHYXANTHIA, (3) p. 50.
b^6. Fore wing with the termen evenly curved..... LOPHOCALAMA, (3) p. 266.
c^5. Prothorax with triangular crest, metathorax with spreading crest ... . IPIMORPHA, (3) p. 147.
d^5. Prothorax with spreading crest, metathorax with divided crest ..... THALPOPHILA, p. 679.
e^5. Pro- and metathorax with spreading crests.
a^6. Thorax clothed chiefly with scales.
a^7. Fore wing long and narrow.
a^8. Palpi with the 2nd joint reaching vertex of head..... ARÆA, p. 688.
b^8. Palpi with the 2nd joint not reaching middle of frons ..... SYRRUSIS, p. 508.
b^7. Fore wing broad.
a^8. Palpi with the 2nd joint reaching vertex of head.
a^9. Palpi with the 3rd joint long.
a^{10}. Hind wing with vein 5 from middle of discocellulars ..... GRACILIPALPUS, p. 42.
b^{10}. Hind wing with vein 5 from below middle of discocellulars. SELAMBINA, p. 516.
b^9. Palpi with the 3rd joint moderate.
a^{10}. Palpi with the 3rd joint porrect.
a^{11}. Fore wing with the apex produced ..... CALLOGONIA, p. 589.
b^{11}. Fore wing with apex rounded... CARBONA, (2) p. 560.
b^{10}. Palpi with the 3rd joint upturned; fore wing with the apex somewhat produced and acute ..... STRIGIPHLEBIA, (2) p. 283.
b^8. Palpi with the 2nd joint reaching about middle of frons ..... AMPHIDRINA, (2) p. 294.
b^6. Thorax clothed with hair and hair-like scales ....

a^7. Palpi with 2nd joint reaching vertex of head; hind wing with the termen excised at discal fold ..... STYGIOSTOLA, p. 44.
b^7. Palpi with the 2nd joint reaching middle of frons; hind wing with the termen evenly curved.
a^8. Palpi with the 3rd joint porrect; fore wing narrow ..... LUPERINA, p. 466.
b^8. Palpi with the 3rd joint upturned; fore wing broader..... MERISTIS, (3) p. 152.
f^5. Prothorax with spreading crest; metathorax without crest.
a^6. Fore wing narrow, the margins subparallel.
a^7. Palpi with the 2nd joint reaching vertex of head.
a^8. Hind wing with veins 3, 4 stalked. HYPOSTILBIA, (2) p. 293.
b^8. Hind wing with veins 3, 4 from cell. ATHETIS, (2) p. 296.
b^7. Palpi slender, the 2nd joint reaching middle of frons ..... ARGYROSPILA, (3) p. 333.
b^6. Fore wing broad, triangular.
a^7. Thorax clothed with hair and scales mixed ..... RAMESODES, (3) p. 264.
b^7. Thorax clothed with hair and hair-like scales..... ARENOSTOLA, (3) p. 281.
g^5. Prothorax without crest; metathorax with small paired crests ..... ARIATHISA, (2) p. 383.
h^5. Prothorax without crest; metathorax with spreading crest.
a^6. Thorax clothed with scales and hair mixed.
a^7. Palpi with the 2nd joint reaching vertex of head.
a^8. Palpi with the 3rd joint porrect ... ATIMÆA, (3) p. 125.
b^8. Palpi with the 3rd joint upturned... CALYMNIODES, (3) p. 128.
b^7. Palpi with the 2nd joint reaching about middle of frons..... PSEUDINA, (3) p. 397.
c^7. Palpi short, porrect.
a^8. Tegulæ produced behind into a slight hood ..... EPIMECIA, (2) p. 288.
b^8. Tegulæ not produced into a hood.
a^9. Fore wing long and narrow.
a^{10}. Fore wing with the apex produced, the termen oblique ..... FERGANA, (2) p. 289.
b^{10}. Fore wing with the apex not produced, the termen less oblique. STILBIA, (2) p. 290.
b^9. Fore wing shorter and broader ... PRÆSTILBIA, (2) p. 292.
b^6. Thorax clothed with hair only ..... MYDRODOXA, (3) p. 493.
i^5. Thorax without crests.
a^6. Thorax clothed chiefly with scales.
a^7. Abdomen dorsally flattened..... PERINÆNIA, p. 21.
b^7. Abdomen not dorsally flattened.
a^8. Fore wing long and narrow.
a^9. Build stout ..... AGROTISIA, p. 692.
b^9. Build slender..... PROXENUS, (2) p. 430.
b^8. Fore wing short and broad.
a^9. Build stout.
a^{10}. Palpi with the 2nd joint reaching vertex of head, slender.
a^{11}. Palpi flattened against frons ... CALLYNA, (3) p. 358.
b^{11}. Palpi cylindrical ..... ELYDNA, (3) p. 158.

b^{10}. Palpi with the 2nd joint reaching middle of frons, broadly scaled.
a^{11}. Hind wing with the termen excised at discal fold ..... PHUPHENA, p. 593.
b^{11}. Hind wing with the termen evenly curved ..... NICARA, (3) p. 183.
b^{9}. Build slender.
a^{10}. Palpi upturned, the 2nd joint reaching vertex of head.
a^{11}. Palpi with the 3rd joint long... MELAGRAMMA, p. 691.
b^{11}. Palpi with the 3rd joint moderate ..... MICRATHETIS, (2) p. 443.
b^{10}. Palpi oblique, the 2nd joint reaching middle of frons ..... AMPHILITA, (3) p. 303.
b^{6}. Thorax clothed with hair and hair-like scales.
a^{7}. Abdomen dorsally flattened.
a^{8}. Palpi with the 2nd joint fringed with hair in front.
a^{9}. Hind wing with vein 5 from middle of discocellulars..... PERIPYRA, p. 25.
b^{9}. Hind wing with vein 5 from below middle of discocellulars..... SYNTOMOPUS, p. 22.
b^{8}. Palpi smoothly scaled; hind wing with vein 5 from middle of discocellulars ..... AMPHIPYRA, p. 26.
b^{7}. Abdomen not dorsally flattened.
a^{8}. Head and thorax clothed with rough hair and spatulate scales ..... OROPLEXIA, p. 510.
b^{8}. Head and thorax smoothly clothed with hair and hair-like scales.
a^{9}. Frons with ridges of hair above and between antennæ..... MIMLEUCANIA, (2) p. 285.
b^{9}. Frons without ridges of hair.
a^{10}. Fore wing with the apex somewhat produced and acute ..... CALYMNIA, (3) p. 187.
b^{10}. Fore wing with the apex rounded. DICYCLA, (3) p. 233.
c^{6}. Thorax clothed with hair only.
a^{7}. Eyes small, reniform.
a^{8}. Palpi extending about the length of head ..... EUTRICOPIS, (3) p. 466.
b^{8}. Palpi extending to just beyond frons. PANEMERIA, (3) p. 487.
b^{7}. Eyes large, round.
a^{8}. Abdomen dorsally flattened ..... BITYLA, p. 41.
b^{8}. Abdomen not dorsally flattened.
a^{9}. Abdomen entirely clothed with rough hair ..... DAPHÆNURA, (3) p. 494
b^{9}. Abdomen with rough hair at base only.
a^{10}. Build stout.
a^{11}. Palpi upturned, the 2nd joint moderately fringed with hair in front ..... ENARGIA, (3) p. 235.
b^{11}. Palpi porrect, the 2nd joint fringed with long hair below.
a^{12}. Fore wing narrow ..... CALAMIA, (3) p. 340.
b^{12}. Fore wing broad ..... ORIA, (3) p. 333.
b^{10}. Build slender ..... HYPOCŒNA, (3) p. 301.
c^{9}. Abdomen smoothly scaled.
a^{10}. Palpi upturned ..... OMMATOSTOLA, (3) p. 339.
b^{10}. Palpi porrect ..... HYPOCALAMIA, (4) p. 495.

Genus TUMIDIFRONTIA.

Type.

Tumidifrontia, Hmpsn. Ann. S. Afr. Mus. ii. p. 282 (1902) ... *castaneotincta*.

Proboscis absent; palpi very short, porrect, and slightly fringed with hair below, not reaching nearly to extremity of the very large rounded frontal prominence, with corneous plate below it; eyes large, round; antennæ of male bipectinate with short branches to apex; thorax clothed chiefly with scales, pro- and metathorax with large spreading crests; tibiæ fringed with long hair, the tarsal joints with slight tufts of hair; abdomen with dorsal crests on basal segments. Fore wing rather long and narrow, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4311. Tumidifrontia castaneotincta.

Tumidifrontia castaneotincta, Hmpsn. Ann. S. Afr. Mus. ii. p. 283 (1902).

♂. Head and thorax rufous mixed with grey and a few blackish scales; tegulæ and patagia at tips and thoracic crests bright rufous; legs pale rufous, the tufts of hair on tarsal joints whitish; abdomen whitish tinged with rufous except at sides towards base, the crests bright rufous. Fore wing pale violaceous grey suffused with pinkish on basal and costal areas, the medial area whitish; some black irroration at base and on inner area before the antemedial line, which is pale rufous defined by whitish on inner side, minutely waved, oblique; orbicular and reniform rather small, whitish

Fig. 1.—*Tumidifrontia castaneotincta*, ♂. ½.

defined by diffused rufous, the former round, the latter with rufous line in centre; a rufous medial line, diffused to median nervure, then sinuous; postmedial line indistinct, rufous defined by whitish on inner side, slightly bent outwards below costa, then sinuous, strongly incurved below vein 3 and bent outwards from submedian fold to inner margin, some black suffusion beyond it on inner area; a fine brown terminal line; cilia whitish tinged with pink. Hind wing white, the costa and termen slightly tinged with ochreous brown; the underside with pinkish suffusion from middle of costa to middle of discocellulars.

Hab. MASHONALAND Salisbury (*Marshall*), 1 ♂ type. *Exp.* 30 millim.

Genus **LOPHOTYNA**, nov.

Type, *L. albirena*.

Proboscis fully developed; palpi oblique, fringed with long hair in front, the 3rd joint short, porrect; frons smooth, with large tuft of hair; vertex of head crested; eyes large, round; antennæ of male ciliated; head and thorax clothed almost entirely with scales, the tegulæ produced to a slight dorsal ridge, the prothorax with high triangular crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex produced and acute, the termen strongly crenulate and obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with the termen waved, veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4312. **Lophotyna albirena.**

Mamestra albirena, Moore, P. Z. S. 1867, p. 53; Hmpsn. Moths Ind. ii. p. 212.

♂. Head and thorax dull reddish brown mixed with some white; frons with lateral black bars; basal joint of antennæ white; tarsi fuscous with pale rings; abdomen reddish brown slightly irrorated with grey and fuscous. Fore wing dull reddish brown tinged with grey and fuscous, the terminal area rather darker, the veins with slight dark streaks; subbasal line whitish, waved, from costa to submedian fold; antemedial line whitish, angled outwards below costa, then oblique, waved; claviform a minute dark mark; orbicular very small, round, with slight pale annulus defined by brown;

Fig. 2.—*Lophotyna albirena*, ♂. ½.

reniform represented by a white bar with point above it and bifid spot below it on its outer edge; traces of a dark oblique medial line bent inwards to costa; postmedial line black slightly defined by whitish on outer side, bent outwards below costa, then minutely dentate and produced to streaks on the veins, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line whitish slightly defined by brown on inner side, angled outwards at vein 7, then waved and somewhat excurved at middle; a fine waved black terminal line; cilia with fine pale line at base. Hind wing fuscous brown, the cilia with whitish line at base, fuscous medial line and pale reddish tips; the underside whitish tinged with

rufous and irrorated with black, a black discoidal lunule and minutely waved postmedial line.

Hab. Sikhim (*Atkinson*, *Möller*, *Dudgeon*, *Pilcher*), 6 ♂ type; Bengal, Calcutta, 1 ♂. *Exp.* 42-46 millim.

Genus GORTYNA.

	Type.
Gortyna, Treit. Schmett. Eur. v. (2) p. 330 (1825)	*leucostigma*.
Heliotropha, Led. Noct. Eur. p. 118 (1857).....	*leucostigma*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, rounded; antennæ of male typically ciliated; head and thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal series of crests on basal segments. Fore wing with the apex rectangular, the termen crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with moderate branches ending in a bristle, the apex ciliated.

A. Fore wing with the postmedial line black defined by grey on outer side.....	*japonica*.
B. Fore wing with the postmedial line very indistinct except at costa.....	*dolia*.

4313. Gortyna japonica.

Euplexia japonica, Leech, P. Z. S. 1889, p. 504, pl. 51. f. 4 (Nov. 1889).
Hadena succincta, Græs. Berl. ent. Zeit. xxxiii. p. 255 (March 1890); Staud. Cat. Lep. pal. p. 175.

Head, thorax, and abdomen dark brown mixed with greyish, the tarsi ringed with white, the anal tuft more rufous. Fore wing greyish suffused with dark brown, the postmedial area, except

Fig. 3.—*Gortyna japonica*, ♂. ½.

towards costa and apex, paler; subbasal line represented by a slight dark striga from costa; antemedial line with two dark striæ from costa and strongly excurved below cell; claviform faintly defined by blackish at extremity; orbicular indistinct, pale, slightly defined by brown, oblique elliptical; reniform very indistinctly defined by blackish and with small white lunule with point

above it on its outer edge; postmedial line black defined by greyish on outer side, indistinctly double towards costa, bent outwards below costa, then very slightly waved, excurved to vein 4, bent inwards below vein 3, then oblique, some pale points beyond it on costa; subterminal line very indistinct, greyish, defined on inner side by slight dark marks, angled outwards at vein 7 and slightly excurved at middle; a terminal series of minute dark lunules; cilia with a fine pale line at base. Hind wing reddish brown, the terminal area darker; cilia with a fine pale line at base; the underside greyish thickly irrorated with brown, the costal area tinged with rufous, a dark discoidal spot and sinuous postmedial line.

Hab. E. Siberia, Amurland, Ussuri, 1 ♂, 1 ♀; Japan, Oiwaké (*Pryer*), 1 ♂, Yokohama (*Pryer*), 2 ♂, 4 ♀ type. *Exp.* 30–38 millim.

*4314. Gortyna dolia. (Plate CXXXVII. fig. 17.)

Hadena dolia, Püng. Iris, xv. p. 151, pl. v. ff. 20, 21 (1902).

Head, thorax, and abdomen grey-white mixed with dark brown, tarsi banded with fuscous. Fore wing grey-white tinged with brown, the medial area with dark brown suffusion in and below cell to submedian fold; subbasal line represented by a black striga from costa; a black streak in base of submedian fold; an oblique black striga across the cell before the antemedial line, which is double filled in with whitish, the inner line indistinct, angled outwards and interrupted below costa, oblique to submedian fold, bent inwards to vein 1 and oblique to inner margin; claviform moderate, defined by black; orbicular and reniform whitish defined by black, the former oblique elliptical, open above; a slight blackish spot on middle of costa; postmedial line with two slight blackish spots on costa, then very indistinct, strongly bent outwards below costa, then oblique to vein 3, then bent inwards to origin of vein 2, then distinct, defined by whitish on outer side and outwardly oblique to inner margin; a slight oblique shade from costa at subterminal line to postmedial line at vein 3; subterminal line whitish with slight dentate brown marks before it between veins 5 and 2, slightly angled outwards at vein 7, dentate at veins 4, 3, then incurved, a dark streak from it to termen above vein 3, the area beyond; a rather more tinged with brown except at apex; a fine waved black terminal line; cilia white at base and with series of slight dark lunules. Hind wing whitish tinged with brown especially in female, traces of a discoidal spot, sinuous postmedial line and diffused subterminal line with the area beyond it paler; a fine dark terminal line; cilia white at base; the underside white, the costal and terminal areas irrorated with pale brown, a brown discoidal lunule, curved postmedial line, and slight subterminal line.

Hab. W. Turkestan, Ferghana, Togus-tarau, type † ♂, Alexander Mts., type ♀ in Coll. Püngeler. *Exp.* 38 millim.

Sect. II. Antennæ of male bipectinate with short branches ending in a bristle; fore wing with the termen slightly angled at vein 3, then oblique to tornus.

A. Fore wing with the postmedial and terminal areas purplish fuscous, the veins of former streaked with white..... *retis.*
B. Fore wing with the postmedial and terminal areas rufous ..... *caduca.*

4315. Gortyna retis.

Eustrotia retis, Grote, Can. Ent. xi. p. 198 (1879); Smith, Cat. Noct. N. Am. p. 311.

Head and thorax violaceous grey mixed with blackish and pale purplish pink; palpi and frons blackish; tarsi black-brown ringed with white; abdomen black-brown mixed with greyish and with sublateral series of black points. Fore wing black-brown suffused with violaceous grey, the veins with slight pale streaks, veins 4, 3 and veins 2 and 1 beyond postmedial line streaked with white;

Fig. 4.—*Gortyna retis*, ♂. ½.

subbasal line black, waved, from costa to submedian fold; diffused oblique black bars across submedian interspaces and above inner margin before the antemedial line, which is indistinctly double, waved, somewhat oblique; claviform faintly defined by black scales; orbicular and reniform small, with brownish centres defined by black and white annuli defined by black, the former oblique elliptical, the latter oblique and angled inwards on median nervure, the area beyond it and the submedian interspace before postmedial line suffused with black; postmedial line black defined by white on outer side, strongly bent outwards below costa, then formed of small black lunules and with slight brown line beyond it, oblique, slightly incurved at discal fold and below vein 3, some white points beyond it on costa; subterminal line, white excurved below vein 7 and at middle, then incurved; a terminal series of small black lunules slightly defined by white on inner side; cilia chequered blackish and white at tips. Hind wing whitish, almost entirely suffused with fuscous brown; a faint discoidal spot and sinuous postmedial line defined by whitish on outer side; a terminal series of slight dark lunules; cilia with a fine pale line at base; the underside whitish irrorated with black-brown, a black discoidal spot, postmedial line bent outwards below costa, crenulate to vein 5, then oblique, and a diffused subterminal band towards tornus.

Hab. U.S.A., Massachusetts, 1 ♀, Pennsylvania, 1 ♂ type. *Exp.* 32 millim.

4316. Gortyna caduca. (Plate CXXXVII. fig. 18.)

Eustrotia caduca, Grote, Can. Ent. viii. p. 207 (1876); Smith, Cat. Noct. N. Am. p. 311.

♀. Head and thorax rufous glossed with pinkish white, the metathorax blackish with a whitish patch; tarsi fuscous ringed with white; abdomen rufous suffused with dark brown. Fore wing pale rufous suffused with purplish grey to postmedial line, towards which it is darker, the basal area irrorated with black; antemedial line indistinct, waved, somewhat oblique; orbicular and reniform small, rufous with slight pale annuli, the former oblique elliptical, the latter oblique; postmedial line strongly bent outwards below costa, angled outwards at vein 7, then oblique, minutely waved, excurved between veins 5 and 3; the postmedial costal area purplish brown with some pale points on costa; subterminal line indistinct, pale, slightly excurved below vein 7 and at middle; a terminal series of slight black lunules; cilia rufous at base with black tips intersected with rufous. Hind wing reddish ochreous suffused with fuscous brown; a faint dark discoidal point and postmedial and subterminal lines; a fine waved black terminal line; cilia ochreous with a dark line through them; the underside ochreous tinged with rufous and irrorated with fuscous, a black discoidal spot and indistinct minutely waved postmedial line excurved below costa.

Hab. Canada; U.S.A., New York, New Jersey, Michigan, Jackson Co. (*Kellicott*), 1 ♀ type. *Exp.* 30 millim.

Sect. III. Antennæ of male ciliated.

A. Fore wing with the subterminal line slightly dentate at veins 4, 3 ..... *reniformis.*
B. Fore wing with the subterminal line excurved at middle ... *leucostigma.*

4317. Gortyna reniformis. (Plate CXXXVII. fig. 19.)

Luperina reniformis, Grote, Can. Ent. vi. p. 14 (1874); Smith, Cat. Noct. N. Am. p. 173.
Heliotropha atra, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 200.

Head and thorax fuscous brown with a few whitish scales; tegulæ with slight black medial line; tarsi black ringed with white; abdomen ochreous greyish suffused and irrorated with brown. Fore wing brown with a purplish gloss and slightly irrorated with black and white, a slight black streak below base of cell; subbasal line represented by double black striæ from costa and cell; a blackish mark above inner margin before the antemedial line, which is double, slightly angled outwards below costa, then oblique, waved; claviform moderate, defined by black; orbicular and reniform with slight whitish annuli defined by black, the former oblique elliptical, open above, the latter produced at lower extremity and with whitish lunule on outer edge; an indistinct medial line oblique from costa to vein 2; postmedial line indistinctly double

filled in with whitish, bent outwards below costa, angled inwards in discal fold, oblique and sinuous below vein 4, the area beyond it somewhat paler, except towards costa on which are some whitish points; subterminal line ochreous defined on inner side by reddish brown and with some blackish marks on outer edge, angled outwards at vein 7 and dentate at veins 4, 3, the area beyond it bluish grey irrorated with white except at apex which is ochreous; a terminal series of slight black lunules; cilia brown with an ochreous line at base. Hind wing ochreous whitish, the veins and terminal half suffused with fuscous brown; a fine black terminal line; cilia ochreous with a dark line through them; the underside ochreous white, the costal and terminal areas irrorated with brown, a dark discoidal spot and sinuous postmedial line.

Ab. 1. *atra*. Fore wing more uniform fuscous brown, the lunule on outer edge of reniform more prominent.

Ab. 2. Brighter in colour; metathoracic crest greyish; fore wing with the medial area suffused with black, the postmedial area whitish; median nervure and bases of veins 3, 4 streaked with white.

Hab. CANADA (*Norman*), 2 ♂, Manitoba, Aweme (*Criddle*), 2 ♂; U.S.A., Northern, Middle, and Central States, New York (*Doubleday, Grote*), 2 ♂, 4 ♀, type and type *atra*. *Exp.* 40–50 millim.

4318. Gortyna leucostigma.

Noctua leucostigma, Hübn. Eur. Schmett., Noct. f. 375 (1808); Staud. Cat. Lep. pal. p. 186.
Noctua fibrosa, Hübn. Eur. Schmett., Noct. f. 385 (1808); Dup. Lép. Fr. vii. 1, p. 132, pl. 109. f. 4; Steph. Ill. Brit. Ent., Haust. iii. p. 7.
Noctua lunina, Haw. Lep. Brit. p. 209 (1809).
Cerastis lævis, Butl. Trans. Ent. Soc. 1881, p. 181.
? *Hydræcia khasiana*, Moore, P. Z. S. 1881, p. 342, pl. 37. f. 5; Hmpsn. Moths Ind. ii. p. 234.

Head and thorax rufous tinged with purplish and mixed with some grey; tarsi ringed with white; pectus with ochreous hair;

Fig. 5.—*Gortyna leucostigma*, ♂. ½.

abdomen pale ochreous dorsally slightly tinged with fuscous, the crests tipped with grey. Fore wing rufous suffused with purplish especially on the inner and postmedial areas, the veins with dark streaks irrorated with white; subbasal line double, waved, from costa to submedian fold; antemedial line indistinctly double, slightly waved, oblique from costa to vein 1 and bent inwards to inner

margin; claviform well developed, rufous defined by brown; orbicular and reniform with slight white annuli defined by brown, the former oblique elliptical, the latter with its lower extremity produced and prominent ochreous lunule on its outer edge; an indistinct dentate medial line oblique from costa to vein 2; postmedial line double at costa, then defined by greyish on outer side and with double series of black points beyond it on the veins, bent outwards below costa, then minutely waved and oblique below vein 4, some white points beyond it on costa; subterminal line ochreous defined by rufous on inner side and with the area beyond it blackish except at apex, angled outwards at vein 7 and excurved at middle; a terminal series of slight black lunules; cilia fuscous brown with fine pale line at base. Hind wing greyish uniformly suffused with brown and slightly tinged with ochreous; cilia whitish with a brown line through them; the underside whitish irrorated with brown, a slight discoidal lunule and indistinct sinuous postmedial line.

Ab. 1. *lævis*. Larger.

Ab. 2. *fibrosa*. Fore wing rather paler, the postmedial area whitish except towards costa.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Sweden; Russia, Livonia, Urals; W. Turkestan, Issyk-Kul; W. Siberia, Altai, 1 ♂, 2 ♀; E. Siberia, Amurland, 2 ♂, 1 ♀, Ussuri; Japan, Hakodaté (*Andrewes*), 1 ♀, Tokio (*Maries*), 1 ♂, 1 ♀ type *lævis*, Yokohama (*Lewis*, *Pryer*), 3 ♂, 2 ♀; Corea, Gensan (*Leech*), 1 ♂, 3 ♀; N. China, Wei-ha-wei (*Fletcher*), 1 ♀; C. China, Chekiang (*Pryer*), 1 ♂; ? Assam, Khásis. *Exp.* 40–48 millim.

Larva. Meyr. Brit. Lep. p. 135; Barrett, Lep. Brit. v. p. 59, pl. 191. f. 1.

Dark grey-brown; dorsal and subdorsal lines faintly paler; dots blackish; head dark brown; thoracic plate black; anal plate surrounded by a ridge. Food-plants: in stems of *Cladium mariscus*, *Iris pseudacorus*, &c. 5–7.

Genus **APAMEA**.

Apamea, Ochs. Schmett. Eur. iv. p. 75 (1816), non descr.; Treit. Schmett. Eur. v. (2) p. 81 (1825) ..... Type. *nictitans*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd short, blunt; frons smooth; eyes large, rounded; antennæ of male ciliated; head and thorax clothed with hair and hair-like scales, tegulæ produced to a slight dorsal ridge, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal series of crests on basal segments and lateral fringes of hair. Fore wing triangular, the apex rectangular, the termen evenly curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the antemedial line double.
  a. Fore wing with the antemedial line waved.
    a^1. Fore wing red-brown, without yellow tinge.
      a^2. Fore wing with white points on outer edge of reniform ..... *butleri.*
      b^2. Fore wing without white points on outer edge of reniform ..... *velata.*
    b^1. Fore wing more or less strongly tinged with yellow.
      a^2. Hind wing suffused with brown..... *nictitans.*
      b^2. Hind wing white tinged with rufous; fore wing with the reniform white..... *ochreola.*
      c^2. Hind wing ochreous tinged with rufous; fore wing with the reniform not white ..... *senilis.*
  b. Fore wing with the antemedial line evenly curved..... *lunata.*
B. Fore wing with the antemedial line single..... *erepta.*

4319. Apamea butleri. (Plate CXXXVII. fig. 20.)

Apamea butleri, Leech, Trans. Ent. Soc. 1900, p. 64.

♀. Head and thorax grey-brown with a few white scales; tarsi with pale rings; abdomen grey suffused with brown, the dorsal crests black. Fore wing cupreous red-brown with slight dark irroration, the medial and terminal areas faintly tinged with fuscous; subbasal line defined by grey on outer side, waved, from costa to submedian fold; antemedial line double filled in with grey, bent inwards below costa, then oblique, minutely waved; claviform defined by blackish; orbicular and reniform with fuscous centres and slight brown annuli defined by black, the former round, the latter slightly angled inwards on median nervure and with white lunule and points on its outer edge; an indistinct rather diffused medial line, oblique from costa to lower angle of cell; postmedial line indistinctly double filled in with grey, bent outwards below costa, then minutely dentate and produced to black and white points on the veins, oblique below vein 4, some white points beyond it on costa: subterminal line indistinct, pale, defined by slight brown suffusion on inner side, angled outwards at vein 7 and slightly excurved at middle; a terminal series of small black lunules; cilia fuscous and grey with fine pale line at base. Hind wing greyish nearly evenly suffused with pale brown; a slight brown terminal line; cilia with a fine pale line at base; the underside grey; the costal area thickly irrorated with brown, a dark discoidal lunule, sinuous diffused postmedial line, and terminal series of small lunules.

Hab. W. China, Omei-shan, 1 ♀ type. *Exp.* 36 millim.

4320. Apamea velata. (Plate CXXXVII. fig. 21.)

Apamea velata, Wlk. xxxii. 671 (1865); Smith, Cat. Noct. N. Am. p. 174.
Hydræcia sera, Grote & Rob. Trans. Am. Ent. Soc. i. p. 345, pl. 7. f. 55 (1868).

Head and thorax red-brown tinged with grey; sides of palpi and frons dark brown; tarsi blackish ringed with white; abdomen grey suffused with brown, the crests dark at tips, the lateral fringes and anal tuft reddish. Fore wing pale red-brown suffused with deep

red-brown on medial and terminal areas except at apex; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line double, waved, oblique; claviform absent; orbicular and reniform with pale reddish centres and slight grey annuli defined by dark brown, the former oblique elliptical, the latter narrow and constricted at middle; a diffused red-brown medial line, oblique from costa to median nervure; postmedial line double, the lines widely separated, the outer line indistinct and with dark points on the veins, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved, some minute pale points beyond it on costa; subterminal line pale reddish, indistinct, defined on inner side by dark brown and with brown patch before it on costa; angled outwards at vein 7 and excurved at middle; a fine waved black terminal line; cilia dark brown with a whitish line at base. Hind wing grey suffused with fuscous, the termen rather paler; a fine dark terminal line; cilia whitish with a brown line through them; the underside whitish irrorated with brown, the costal area tinged with rufous, a slight discoidal lunule, sinuous postmedial line, and indistinct diffused subterminal line.

Hab. CANADA (*Norman*), 1 ♂, 1 ♀, Nova Scotia (*Redman*), 1 ♀, Ontario, Ottawa (*Saunders*), 2 ♀, London (*Saunders*), 2 ♂, 1 ♀; U.S.A., Maine to Pennyslvania and W. to Iowa and Missouri, New York (*Doubleday*, *Packard*), 1 ♂, 5 ♀, Evans Center (*Grote*), 2 ♂. *Exp.* 38–40 millim.

4321. Apamea nictitans.

Noctua nictitans, Linn. Syst. Nat. ed. xii. p. 847 (1766); Esp. Schmett. iv. pl. 126. ff. 5–6; Borkh. Eur. Schmett., Noct. p. 463 (1792); Dup. Lép. Fr. vii. p. 58, pl. 104. f. 2; Steph. Ill. Brit. Ent., Haust. iii. p. 7; Smith, Cat. Noct. N. Am. p. 174; Staud. Cat. Lep. pal. p. 186.
Noctua chrysographa, Schiff. Wien. Verz. p. 313 (1776); Hübn. Eur. Schmett., Noct. f. 221.
Noctua myopa, Fabr. Ent. Syst. 3. 2, p. 116 (1794).
Noctua cinerago, Fabr. Ent. Syst. Suppl. p. 445 (1798).
Noctua auricula, Don. Nat. Hist. Brit. Ins. xii. p. 5, pl. 397. f. 3 (1807).
Noctua erythrostigma, Haw. Lep. Brit, p. 240 (1809).
Noctua fucosa, Frr. Beitr. iii. p. 152, pl. 141. f. 2 (1830).
Apamea lucens, Frr. Neue Beitr. v. p. 143, pl. 468. ff. 3, 4 (1845); Herr.-Schäff. Eur. Schmett., Noct. ff. 285–8 (1847).
Hydræcia americana, Speyer, Stett. ent. Zeit. xxxvi. p. 152 (1875).
Hydræcia paludis, Tutt, Ent. xxi. pl. 1. ff. 1–6 (1888).
Hydræcia lisca, Smith, List Lep. N. Am. p. 45 (1891).
Hydræcia pallescens, Staud. Iris, xii. p. 342 (1899).
Hydræcia pacifica, Smith, Trans. Am. Ent. Soc. xxvi p. 19 (1899).
Hydræca atlantica, Smith, Trans. Am. Ent. Soc. xxvi. p. 18 (1899).
Hydræcia interoceanica, Smith, Trans. Am. Ent. Soc. xxvi. p. 17 (1899).
Hydræcia crinanensis, Burrows, Ent. Rec. xx. p. 184 (1908).

Head and thorax orange-red; tegulæ with the basal half yellower with a brown medial line; abdomen pale orange-red, the base rather greyer and slightly tinged with brown, the crests somewhat darker. Fore wing orange-red suffused with rufous, especially on medial area; subbasal line indistinct, double, minutely waved, from costa to submedian fold; antemedial line double, waved, oblique; claviform absent; orbicular orange defined by brown, round; reniform

defined by brown, its inner part orange, a white central lunule defined by brown, its upper and outer parts white broken up into spots by streaks on the veins; a diffused brown medial line, oblique from costa to median nervure; postmedial line double, the lines widely separated and with traces of another line between them, bent outwards below costa, then minutely waved, excurved to vein 4,

Fig. 6.—*Apamea nictitans*, ♂. ½.

then incurved, some minute pale points beyond it on costa; subterminal line angled outwards at vein 7 and inwards at discal and submedian folds, excurved at middle; a deep red-brown line just before termen; cilia dark brown. Hind wing pale rufous suffused with fuscous except at termen; a fine brown terminal line; cilia pale rufous, whitish at tips; the underside whitish, the costal area suffused with rufous, a small dark discoidal spot, sinuous postmedial line, and diffused subterminal line.

Ab. 1. *lucens*. Larger.

Ab. 2. *erythrostigma*. Fore wing with the reniform orange.

Ab. 3. *americana*. Fore wing rather more orange-red.—E. States and Canada.

Ab. 4. *interoceanica*. Fore wing browner.—W. Canada.

Ab. 5. *pacifica*. Fore wing greyer.—California.

Ab. 6. *pallescens*. Much paler; fore wing ochreous white tinged with brown.—W. and E. Turkestan.

Hab. CANADA, Hudson's Bay, Nova Scotia (*Redman*), 4 ♂, Renfrew Co., 13 ♂, Ontario, (*Gibson*), 1 ♀, Ottawa (*Gibson*), 1 ♂, 1 ♀, Manitoba (*Fletcher*), 1 ♀, Aweme (*Criddle*), 2 ♂, Beulah (*Dennis*), 1 ♂, Alberta, Calgary (*Wolley-Dod*), 5 ♂, 1 ♀; U.S.A., E. States (*Packard, Speyer*), 8 ♂, 3 ♀, Colorado (*Cockerell*), 2 ♂; BRITAIN, Leech Coll.; FRANCE; GERMANY, Zeller & Leech Colls.; AUSTRIA; HUNGARY; SWITZERLAND, Frey Coll.; N. ITALY; SCANDINAVIA; RUSSIA, Livonia, Zeller Coll., St. Petersburg, Zeller Coll., Urals; ARMENIA; W. TURKESTAN; Ferghana; W. SIBERIA, Altai; E. TURKESTAN, 1 ♂, Thian Shán, Korla; TIBET, Amdo; E. SIBERIA, Amurland, Ussuri; KAMSTSHATGAR; JAPAN, Hakodaté, 2 ♂, Oiwaké (*Pryer*), 2 ♂, Tokio (*Maries*), 1 ♂, 3 ♀; COREA, Gensan (*Leech*), 3 ♀; W. CHINA, Chang Yang (*Pratt*), 1 ♀. *Exp.* 34–40 millim.

Larva. Meyr. Brit. Lep. p. 135; Barrett, Lep. Brit. v. p. 65, pl. 192.

Ochreous grey or pinkish grey; dorsal, subdorsal, lateral, and spiracular lines pale greyish ochreous; head pinkish ochreous; thoracic plate yellow-brown. Food-plants: Grasses. 6–7.

4322. Apamea ochreola.

Hydræcia ochreola Staud. Stett. ent. Zeit. 1882, p. 42; Alph. Rom. Mém. v. p. 164, pl. 7. f. 6; Staud. Cat. Lep. pal. p. 186.
Luperina renalis, Alph. Stett. ent. Zeit. 1887, p. 170.

♀. Head and thorax pale red mixed with yellowish; abdomen ochreous suffused with pale red, the ventral surface red. Fore wing yellow thickly irrorated with red, the end of cell and area beyond it to postmedial line suffused with red; subbasal line red, double, waved, from costa to submedian fold; antemedial line red, double, the lines well separated, waved, somewhat oblique; orbicular defined by red, small, somewhat oblique elliptical; reniform white slightly defined by blackish, a narrow oblique lunule with its upper and lower extremities curved inwards and a slight line of red scales in centre; a diffused sinuous medial red line, oblique from costa to median nervure; postmedial line red, double, the lines well separated, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved; a very indistinct curved waved subterminal line; a fine waved red terminal line; cilia red with a paler line at base. Hind wing white tinged with red especially on the veins; the underside white irrorated with red, a curved red postmedial line.

Hab. W. Turkestan, ? Ferghana, Saisan, Ala Tau, Aulic-Ala, 1 ♀. *Exp.* 42 millim.

*4323. Apamea senilis. (Plate CXXXVII. fig. 22.)

Hydræcia senilis, Smith, Trans. Am. Ent. Soc. xxi. p. 73, pl. 1, row 1, f. 6 (1894); Dyar, Cat. Lep. N Am. p. 175.

♀. Head and thorax bright rufous mixed with ochreous; abdomen ochreous tinged with rufous. Fore wing ochreous suffused with rufous; subbasal line rufous, indistinct, oblique, from costa to submedian fold; antemedial line double, the lines widely separated, waved, curved; claviform moderate, defined by rufous; orbicular and reniform defined by rufous, the former elliptical; an indistinct medial line, oblique from costa to median nervure, then inwardly oblique; postmedial line double, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved; an indistinct double minutely waved subterminal line; a fine red-brown terminal line; cilia rufous. Hind wing ochreous uniformly tinged with rufous; the underside with the costal area rather deeper rufous.

Hab. U.S.A., Colorado, New Mexico, White Mts. in Coll. J. B. Smith. *Exp.* 44 millim.

*4324. Apamea lunata. (Plate CXXXVII. fig. 23.)

Apamea lunata, Smith, Trans. Am. Ent. Soc. xviii. p. 110 (1891); id. Cat. Noct. N. Am. p. 173.
Hydræcia albilunata, Smith, Trans. Am. Ent. Soc. xxvi. p. 14 (1899); Dyar, Cat. Lep. N. Am. p. 174.

Head and thorax reddish ochreous; abdomen white tinged

with red. Fore wing ochreous irrorated with red; subbasal line absent; antemedial line fine, whitish, evenly curved; claviform and orbicular absent; reniform a narrow white lunule defined by black scales; the veins of medial area slightly irrorated with black; postmedial line fine, whitish, bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line pale, defined on inner side by a dark shade at costa, then by a series of points in the interspaces; a fine brown terminal line. Hind wing whitish tinged with red, somewhat more deeply on terminal area; the underside whitish irrorated with red.

Hab. U.S.A., California, Alameda, Mt. Schasta Distr. *Exp.* 28–34 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

4325. Apamea erepta. (Plate CXXXVII. fig. 24.)

Gortyna erepta, Grote, Bull. U. S. Geol. Geog. Surv. Terr. vi. p. 267 (1881); Smith, Cat. Noct. N. Am. p. 175.

♀. Head and thorax ochreous tinged with rufous; sides of palpi and frons with some dark brown scales; pro- and metathoracic crests tipped with dark brown; abdomen ochreous with diffused lateral purple-brown stripes. Fore wing ochreous yellow irrorated with rufous, especially on costal half, the veins slightly streaked with brown; subbasal line diffused, rufous, oblique from costa to median nervure; antemedial line red-brown, oblique from costa to submedian fold, then waved; claviform represented by an oblique rufous striga at its extremity; orbicular with slight whitish annulus defined by diffused rufous; reniform a white lunule defined by dark brown, diffused on inner side; postmedial line red-brown, bent outwards below costa, excurved to vein 4, then oblique; subterminal line rufous, very indistinct and interrupted, excurved at vein 7; a fine red-brown terminal line; cilia yellow tipped with red-brown. Hind wing pale yellow, the terminal area slightly irrorated with red-brown; a slight brownish discoidal lunule, faint diffused curved postmedial line and slight terminal line from apex to vein 2; the underside with the costal and terminal areas slightly irrorated with red-brown, a slight discoidal lunule and diffused curved postmedial line.

Hab. U.S.A., Kansas, Douglas Co. (*Snow*), 1 ♀ type. *Exp.* 36 millim.

Genus ACHATODES.

	Type.
Achatodes, Guen. Noct. i. p. 132 (1852)	*zeæ*.

Proboscis aborted, minute; palpi obliquely porrect, extending to slightly beyond frons, the 2nd joint moderately fringed with hair, the 3rd short; frons with large tuft of hair and pointed corneous process; eyes large, round;

antennæ of male ciliated and with ridge of scales on base of shaft; thorax clothed with scales and hair mixed and with broad dorsal ridge of long scales; tibiæ moderately fringed with hair; abdomen with dorsal series of large crests, lateral tufts of hair on terminal segments and large spreading anal tuft. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing whitish tinged with brown ..... *zeæ*.
B. Hind wing dark brown..... *jaunæ*.

4326. Achatodes zeæ.

Gortyna zeæ, Harr. Ins. inj. to Veg. 1st ed. p. 319 (1841); id. Flint ed. p. 439, pl. 7. f. 9; Smith, Cat. Noct. N. Am. p. 179.
Achatodes sandix, Guen. Noct. i. p. 132, pl. 6. f. 4 (1852).

Head and thorax fiery red mixed with pale yellow; palpi and sides of frons dark brown; tegulæ with brown patches at sides; patagia with brown upper edges; pectus and legs dark brown, the tarsi ringed with white; abdomen dorsally fiery red, ventrally dark brown. Fore wing with the costal half grey-brown suffused with fiery red at base, in end of cell and at apex, the inner half grey with some red suffusion at base, middle and termen, the veins with dark streaks; subbasal line indistinct, double, from costa to median nervure; antemedial line indistinct, double, waved, with black point on its inner edge at vein 1, nearly erect; claviform small, defined by brown; orbicular small, narrow, oblique, with brown centre and grey annulus; reniform grey, its centre defined by brown, rather oblique; an indistinct oblique waved red line

Fig. 7.—*Achatodes zeæ*, ♂. ½.

from lower angle of cell to inner margin; postmedial line brown defined by grey on outer side, slightly bent outwards below costa, oblique to vein 6, then dentate and produced to a double series of black points on the veins, oblique below vein 4, some grey points beyond it on costa; subterminal line yellow, from costa to vein 6 and bent outwards at vein 7, then represented by a series of slight yellow spots on red streaks in the interspaces, somewhat excurved at middle; a terminal series of slight dark spots; cilia brown with

series of slight whitish spots. Hind wing white suffused with grey-brown, especially on costal area, the terminal area rather whiter; an indistinct discoidal spot, curved postmedial line, and diffused subterminal line; a brown terminal line; cilia white tinged with brown towards apex; the underside white, the costal area tinged with red and irrorated with brown, a dark discoidal spot and rather diffused curved postmedial line.

Hab. Canada; U.S.A., Northern, Middle, Central and Southern States, New York, Trenton Falls (*Doubleday*), 5 ♂ type *sandix*, Evans Center (*Grote*), 2 ♂, 1 ♀, Florida (*Doubleday*), 1 ♂, Colorado. *Exp.* 28–34 millim.

Larva. Head black, polished. Body cylindrical, whitish, the tubercles and shields all large, shining black. Food-plant: Elder (*Sambucus*). N.B.—*Not* Indian corn (*Zea*), which is an error.—H. G. D.

4327. Achatodes juanæ.

Achatodes juanæ, Schaus, Trans. Am. Ent. Soc. xxi. p. 232 (1894); Druce, Biol. Centr.-Am., Het. ii. p. 478, pl. 93. f. 15.

Head and thorax red-brown, the vertex of head fiery red, the metathorax with some red scales; tarsi ringed with white; abdomen red-brown, the crests fiery red. Fore wing dark red-brown, the inner area redder, the apex red, the interspaces of terminal area with red streaks; subbasal line indistinct, waved, from costa to submedian fold; antemedial line indistinct, double, waved, nearly erect; orbicular and reniform indistinctly defined by blackish, the former round, the latter somewhat angled inwards on median nervure; an indistinct oblique waved line from lower angle of cell to inner margin; postmedial line double, slightly bent outwards below costa, oblique to vein 6, then minutely dentate, oblique below vein 4, some white points beyond it on costa; subterminal line represented by a series of slight yellow points with more distinct spot above vein 7; a terminal series of slight brown lunules; cilia dark brown with slight greyish lines at base and middle. Hind wing dark red-brown, some yellowish on termen towards tornus; cilia brown mixed with greyish, some whitish points at base, from apex to vein 4, and a dark line at middle; the underside with indistinct dark diffused curved medial line, the terminal area suffused and irrorated with greyish.

Hab. Mexico, Jalapa (*Trujillo, Hoege*), 2 ♂, 1 ♀, Godman-Salvin Coll., Teapa, Vera Cruz. *Exp.* ♂ 36, ♀ 40 millim.

Genus **XANTHŒCIA**, nov.

Type, *X. flavago.*

Proboscis fully developed; palpi obliquely porrect, the 2nd joint fringed with long hair below, the 3rd short; frons with pointed conical prominence; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, the tegulæ produced to a slight dorsal ridge, prothorax with

sharp triangular ridge-like crest, the metathorax with divided crest; tibiæ fringed with long hair; abdomen with dorsal crest at base only. Fore wing with the apex somewhat produced and acute, the termen nearly straight to vein 3, then oblique and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing purplish-red ..... *buffaloensis.*
B. Fore wing yellow..... *flavago.*

4328. Xanthœcia buffaloensis. (Plate CXXXVII. fig. 25.)

Ochria buffaloensis, Grote, Can. Ent. ix. p. 88 (1877); Smith, Cat. Noct. N. Am. p. 179.

♀. Head and thorax deep purplish red, the scales tipped with grey; abdomen paler purplish red. Fore wing purplish red, the ante- and postmedial areas more purple; the veins with dark streaks; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, angled inwards on vein 1; orbicular white tinged with yellow and defined by rufous, small, elliptical; reniform white tinged with yellow and defined by rufous, its centre with sinuous yellow line defined by red, its lower extremity broken up into spots by streaks on the veins, narrow and constricted at middle; medial line oblique from costa to lower angle of cell, then sinuous; postmedial line double, the outer line purplish fuscous, bent outwards below costa and oblique below vein 6, some pale points beyond it on costa; subterminal line brown, angled outwards at vein 6, dentate at veins 4, 3, 2; a terminal series of slight brown striæ; cilia brown with a few whitish scales and slight red line at base. Hind wing ochreous suffused with brown and purplish red except at base; an indistinct brown postmedial line; a slight rufous terminal line; the underside yellowish suffused with rufous, a slight brown discoidal lunule and nearly straight postmedial line.

Hab. U.S.A., New York, Buffalo (*Miss M. Walker*), 1 ♀ type. *Exp.* 46 millim.

4329. Xanthœcia flavago.

Noctua flavago, Schiff. Wien. Verz. p. 86 (1776); Esp. Schmett. iv. pl. 112. ff. 2–4 (1788); Hübn. Eur. Schmett., Noct. ff. 186–7; Dup. Lép. Fr. vii. p. 252, pl. 116. f. 2; Frr. Neue Beitr. pl. 484; Sepp, Ins. i. pt. 4, pl. iii.; Steph. Ill. Brit. Ent., Haust. iii. p. 70.
Noctua ochracea, Hübn. Beitr. i. 1, p. 19, pl. 2. f. M (1786); Staud. Cat. Lep. pal. p. 187.
Gortyna cinarea, Gooss. Ann. Soc. Ent. Fr. 1880, p. 157.

Head and thorax rufous mixed with brown and grey, the base of tegulæ rather redder; abdomen yellow suffused with rufous. Fore wing yellow irrorated with red, the ante- and postmedial areas

red-brown tinged with grey, the veins streaked with red-brown; subbasal line red defined by yellow on outer side, angled outwards on subcostal and median nervures, incurved in cell and ending on vein 1, a yellow point beyond it in cell; antemedial line double, red filled in with yellow, incurved in submedian interspace and excurved above inner margin; claviform rounded, yellow defined by red; orbicular and reniform yellow defined by red-brown and with some red irroration in centres, the former round, the latter somewhat angled inwards on median nervure and with its centre defined by red-brown; a rather diffused red medial line oblique below submedian fold and ending at antemedial line; postmedial line

Fig. 8.—*Xanthœcia flavago*, ♂. ½.

double filled in with yellow, the inner line minutely waved, bent outwards below costa, oblique and somewhat sinuous below vein 4, some yellow points beyond it on costa; subterminal line red, incurved below costa, at discal fold and below vein 3; a fine red-brown terminal line; cilia red-brown tinged with greyish. Hind wing pale yellow, the veins red-brown; a faint red-brown discoidal lunule, sinuous postmedial line, diffused subterminal band and fine terminal line; cilia yellow tinged with rufous at base; the underside slightly irrorated with red-brown, the costal area suffused with red, the postmedial line more diffused, straight and oblique.

Ab. 1. *cinarea*. Fore wing pale yellow or reddish grey, the stigmata almost obsolete, a dark patch between orbicular and reniform, the terminal area of the ground-colour or violet-brown without pale apical patch; hind wing whitish or greyish without markings.—Algeria.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; ? Corsica; Italy; Algeria; Sweden; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Pontus; W. Siberia, Altai. *Exp.* 34–46 millim.

Larva. Meyr. Brit. Lep. p. 110; Barrett, Lep. Brit. v. p. 75, pl. 193. f. 2.

Ochreous whitish to pale brownish, sometimes tinged with pink; warts large, black; head yellow-brown; thoracic plate dark brown. Food-plants: stems of *Carduus*, *Arctium*, *Verbascum*, &c. 5–8.

Genus **HYDRŒCIA.**

Gortyna, Ochs. Schmett. Eur. iv. p. 82 (1816), non descr.; Type.
Hübn. Verz. p. 232 (1827), nec Treit. 1825 ..... *micacea.*
Hydrœcia, Dup. Cat. Meth. p. 114 (1844) ..... *micacea.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male typically minutely serrate; thorax clothed with hair and hair-like scales, the tegulæ produced to a slight dorsal ridge, the prothorax with sharp triangular crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with some rough hair at base, dorsal crest on 1st segment and lateral fringes of hair. Fore wing with the apex somewhat produced and acute, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with long branches, the apex ciliated.

A. Fore wing with the claviform and orbicular white, the reniform surrounded by white spots ..... *serrata.*
B. Fore wing without white on the stigmata.
a. Fore wing yellow tinged with rufous; hind wing yellowish ..... *osseola.*
b. Fore and hind wings brownish white ..... *hucherardi.*

4330. **Hydrœcia serrata.**

Gortyna serrata, Grote, N. Am. Ent. i. p. 94 (1880); Smith, Cat. Noct. N. Am. p. 179.

Head, thorax, and abdomen fiery red mixed with white. Fore wing pale fiery red with some yellowish white on basal area; subbasal line double, red filled in with yellowish, waved, from costa to vein 1, with small white spot beyond it in cell; antemedial line

Fig. 9.—*Hydrœcia serrata*, ♂. ½.

red, incurved in submedian interspace and with white points before it below submedian fold; claviform large, rounded, white defined by red and bisected by a red streak in submedian fold; orbicular large, round, white defined by red-brown and with red point in centre; reniform large with pale yellow irregular bar in centre

surrounded by white spots defined by rufous; postmedial line slight, rufous, bent outwards below costa, then minutely waved, incurved below vein 4, some whitish points beyond it on costa; subterminal line indistinct, rufous, incurved to vein 6 and with some yellowish beyond it, then minutely waved; a fine red-brown terminal line. Hind wing yellowish irrorated with brown and suffused with rufous on terminal area; cilia white at tips; the underside yellowish, the costal and terminal areas suffused with rufous, a slight brown discoidal spot and curved postmedial line slightly waved towards costa.

Hab. U.S.A., Colorado (*Cockerell*), 2 ♀, Denver, ♂ in Coll. Bird. *Exp.* 36 millim.

*4331. Hydrœcia osseola.

Hydrœcia osseola, Staud. Stett. ent. Zeit. 1882, p. 43; Alph. Rom. Mém. ix. p. 31, pl. 3. f. 4; Staud. Cat. Lep. pal. p. 187.
Hydrœcia burkhana, Alph. Hor. Ent. Soc. Ross. xxvi. p. 450 (1892).

♂. Head and thorax yellow slightly tinged with rufous; abdomen white tinged with yellow. Fore wing yellow slightly suffused and irrorated with rufous; subbasal line faint, rufous, angled outwards below costa and ending at submedian fold; antemedial line faint, double, rufous, erect; claviform a slight rufous mark; orbicular and reniform slightly defined by rufous, the former rather elongate elliptical, the latter oblique and with its outer edge diffused; medial line rufous, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line fine, rufous, excurved below costa, then oblique, slightly defined on outer side by rufous; subterminal line whitish defined on each side by rufous suffusion, slightly excurved below vein 7 and at middle; a fine rufous terminal line. Hind wing yellowish white; the underside with the costal area tinged with reddish yellow.

Hab. W. Turkestan, Uralsk, in Coll. Püngeler, Tarbagatai Mts.; Tibet, Amdo. *Exp.* 42 millim.

*4332. Hydrœcia hucherardi. (Plate CXL. fig. 5.)

Hydrœcia hucherardi, Mab. Bull. Soc. Ent. Fr. 1907, p. 37.

♂. Head, thorax, and abdomen ochreous white slightly tinged with brown, the sides of palpi and frons browner. Fore wing ochreous white slightly tinged and irrorated with brown; very faint traces of a double curved antemedial line; claviform a faint brownish streak; orbicular absent; reniform a fuscous oblique bar somewhat constricted at middle; postmedial line fine, dark, defined on outer side by whitish, slightly excurved below costa, then oblique; subterminal line represented by a fuscous shade on its inner side, very slightly excurved below vein 7 and at middle; a fine dark terminal line; cilia dark brown at tips. Hind wing

white very faintly tinged with ochreous; the underside with the costal area slightly irrorated with fuscous.

Hab. W. France, Charente Inf., Royau in Coll. Hucherard. *Exp.* ♂ 42, ♀ 52 millim.

Sect. II. Antennæ of male bipectinate with very short fasciculate branches.

A. Fore wing of male white tinged with rufous, of female grey with the medial area rufous ..... *pallescens.*
B. Fore wing of both sexes ochreous-white tinged with rufous .. *medialis.*

4333. Hydrœcia pallescens. (Plate CXXXVII. fig. 26.)

Hydrœcia pallescens, Smith, Trans. Am. Ent. Soc. xxvi. p. 25 (1899); Dyar, Cat. Lep. N. Am. p. 175.

♂. Head and thorax white slightly tinged with rufous; tarsi rufous ringed with white; abdomen white with a very faint rufous tinge. Fore wing white tinged with rufous, more strongly on medial area except towards costa; subbasal line indistinct, whitish, angled outwards on subcostal nervure and ending at submedian fold; antemedial line white, angled inwards on subcostal nervure, strongly excurved to submedian fold, then sinuous; claviform represented by a faint pale mark; orbicular and reniform whitish, undefined, the former rather oblique elliptical; postmedial line white, strongly bent outwards below costa, then very oblique and slightly sinuous; subterminal line whitish slightly defined by rufous on outer side, somewhat excurved at vein 7 and middle; cilia white at base, tinged with rufous at tips. Hind wing white with a faint yellowish tinge, the cilia pure white; the underside with the costa faintly tinged with rufous, an indistinct sinuous postmedial line.

♀. Head, thorax, abdomen, and wings with the ground-colour grey.

Hab. Canada, Alberta, Calgary (*Wolley-Dod*), 2 ♂, 1 ♀, High R. (*Baird*), 1 ♂, 1 ♀; U.S.A., Oregon, Fort Klamath. *Exp.* 50 millim.

4334. Hydrœcia medialis.

Hydrœcia medialis, Smith, Trans. Am. Ent. Soc. xxi. p. 74 (1894); Dyar, Cat. Lep. N. Am. p. 175.

♂. Head and thorax bright rufous mixed with yellowish; abdomen ochreous tinged with rufous. Fore wing ochreous-white tinged with rufous and slightly irrorated with red-brown, a broad band of rufous suffusion before the postmedial line from costa to vein 1; antemedial line very indistinct, rufous, oblique from costa to submedian fold, then slightly incurved; orbicular large, round, defined by a fine rufous line except above; reniform large, defined by a fine rufous line, the upper extremity produced; postmedial line white, strongly bent outwards below costa and very oblique below vein 7; subterminal line very indistinct, pale, angled outwards at vein 7, excurved at middle, then oblique; a fine rufous terminal

line; cilia rufous with an ochreous line at base. Hind wing white suffused with brownish ochreous; the underside white suffused with yellow.

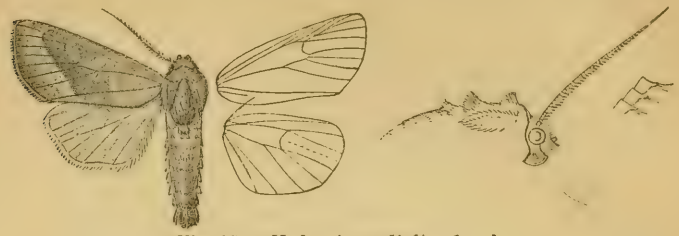


Fig. 10.—*Hydræcia medialis*, ♂. ½.

Hab. U.S A., Washington, Colorado, Glenwood Springs, Custer Co., Cusack Ranch (*Cockerell*), 2 ♂. *Exp.* 48 millim.

Sect. III. Antennæ of male strongly serrate and fasciculate.

A. Fore wing bright rufous, the medial area deep rufous ..... *cervago.*
B. Fore wing ochreous white tinged with red-brown especially on medial area..... *obliqua.*
C. Fore wing with the ground-colour yellowish, the claviform whitish with a dark cross on it..... *puengeleri.*

*4335. Hydræcia cervago. (Plate CXXXVII. fig. 27.)

Gortyna cervago, Ev. Bull. Mosc. 1844, iii. p. 594, pl. 15. ff. 1, *a–c*, & 1855, iv. p. 376; id. Faun. Volg. & Ur. p. 612; Staud. Cat. Lep. pal. p. 187.

♂. Head and thorax bright rufous; antennæ with the shaft white; abdomen paler rufous. Fore wing pale bright rufous, the medial area deep rufous; antemedial line rufous defined on inner side by whitish, angled inwards on subcostal nervure and vein 1 and outwards in submedian fold; orbicular and reniform pale rufous, the former small, rather oblique elliptical, the latter narrow with rufous line in middle; postmedial line rufous defined on outer side by whitish, bent outwards below costa, then obliquo, some whitish points beyond it on costa; subterminal line pale, defined on inner side by rufous suffusion, slightly excurved below vein 7 and at middle; the veins of terminal area slightly streaked with deep rufous; a fine rufous terminal line; cilia deep rufous. Hind wing white, the costal and terminal areas faintly tinged with rufous; an oblique rufous postmedial line and faint diffused subterminal shade; a fine rufous terminal line; cilia with a slight rufous line through them from apex to vein 2; the underside with the costal area suffused and irrorated with deep rufous, a diffused postmedial line bent inwards to costa and faint subterminal shade.

♀. Larger and darker.

Hab. Russia, Urals (*Bartel*), in Coll. Püngeler; Armenia; W. Turkestan, Turcomania. *Exp.* 44 millim.

4336. Hydrœcia obliqua.

Gortyna obliqua, Harv. Can. Ent. viii. p. 53 (1876); Smith, Cat. Noct. N. Am. p. 175.

Head and thorax yellowish white mixed with pale red-brown; abdomen ochreous white tinged and irrorated with brown, the ventral surface paler. Fore wing ochreous white irrorated with red-brown, the medial area suffused with red-brown except towards costa; antemedial line brown, strongly curved; orbicular and reniform large, defined by brown except above, the former large; postmedial line brown defined by white on outer side, strongly bent outwards and obsolescent below costa and very oblique below vein 6; subterminal line whitish defined on inner side by reddish-brown suffusion, excurved below vein 7 and at middle; a fine red-brown

Fig. 11.—*Hydrœcia obliqua*, ♂. ½.

terminal line. Hind wing white irrorated and suffused in parts with reddish brown, the veins reddish brown; a sinuous brown postmedial line and fine terminal line; the underside white tinged with red-brown, an indistinct slightly curved brown postmedial line.

Hab. U.S.A., Dakota, Arkansas, Colorado, California, Sierra Nevada, 1 ♂, 1 ♀. *Exp.* ♂ 46, ♀ 56 millim.

*4337. Hydrœcia puengeleri. (Plate CXXXVII. fig. 28.)

Hydrœcia puengeleri, Turati, ined.

♂. Head and thorax yellow slightly tinged with rufous, the tegulæ and patagia edged with pale grey-brown, the vertex of thorax mixed with grey-brown; pectus whitish mixed with grey-brown; legs reddish yellow; abdomen orange-yellow; the basal crest and anal tuft above mixed with fuscous, the ventral surface white irrorated with fuscous. Fore wing narrow, yellowish white irrorated with red-brown, the cell and apical half of terminal area suffused with grey-brown, the veins streaked with brown; subbasal line double, rufous filled in with yellow, angled inwards in cell and ending at vein 1, a whitish point beyond it in cell; antemedial line double, rufous filled in with yellow, angled outwards below costa and above inner margin; claviform whitish defined by rufous and with a dark cross on it, short and broad; orbicular yellowish white defined by rufous, its centre defined by rufous, elongate elliptical,

its outer side open; reniform with its centre defined by rufous and surrounded by white points defined by rufous, rather angled inwards on median nervure; medial line oblique, waved, from lower angle of cell to inner margin; postmedial line double, strongly bent outwards below costa, oblique to vein 4, then incurved; subterminal line white, defined on inner side by an oblique dark bar from costa, then by slight dark marks, slightly angled outwards at veins 7, 6 and excurved at middle; a fine waved brown terminal line; cilia reddish yellow mixed with brown at tips. Hind wing white, the veins and a fine terminal line yellowish; a very faint brownish subterminal shade; cilia yellowish white; the inner margin with some yellowish hair; the underside with the costa tinged with yellow and slightly irrorated with brown.

Hab. Sicily, in Coll. Püngeler. *Exp.* 50 millim.

Sect. IV. (*Hydræcia*). Antennæ of male minutely serrate and fasciculate.

A. Fore wing with the centres of orbicular and reniform not defined by brown.
  a. Fore wing with the postmedial line not dentate.
    a^1. Hind wing with dark postmedial line.
      a^2. Fore wing with the subterminal line double except towards costa.
        a^3. Fore wing with the medial line angled inwards to orbicular at middle of cell ..... *songariæ*.
        b^3. Fore wing with the medial line not angled inwards to orbicular at middle of cell ..... *immanis*.
      b^2. Fore wing with the subterminal line single.
        a^3. Fore wing with the subterminal line distinctly excurved and slightly waved at middle.
          a^4. Hind wing grey suffused with brown..... *petasitis*.
          b^4. Hind wing yellowish suffused with brown ... *amurensis*.
        b^3. Fore wing with the subterminal line hardly excurved and not waved at middle ..... *micacea*.
    b^1. Hind wing without postmedial line.
      a^2. Fore wing uniformly suffused with rufous ..... *perobliqua*.
      b^2. Fore wing pale yellow, the costal area tinged with purplish pink.
        a^3. Fore wing with the subterminal line single, excurved at middle ..... *stramentosa*.
        b^3. Fore wing with the subterminal line double except towards costa, excurved and waved at middle .. .. *diplocyma*.
  b. Fore wing with the postmedial line dentate ..... *juvenilis*.
B. Fore wing with the centres of orbicular and reniform defined by brown.
  a. Fore wing without white on orbicular and reniform ... *mœsiaca*.
  b. Fore wing with white annulus to orbicular and white spots round centre of reniform ..... *leucographa*.

*4338. Hydræcia songariæ.

Hydræcia songariæ, Alph. Hor. Ent. Soc. Ross. xvii. p. 80, pl. ii. f. 48 (1882); Staud. Cat. Lep. pal. p. 187.

Head, thorax, and abdomen yellow tinged with red. Fore wing below tinged with brown or reddish, the medial area somewhat

browner; subbasal line slight, brown, from costa to median nervure; antemedial line brown, sinuous, excurved; orbicular and reniform large, yellow defined by brown, the former diamond-shaped; medial line brown, angled inwards in cell, then outwards to lower angle, then incurved, some yellow before and beyond it in cell and before it below the cell; postmedial line brown, excurved from costa to vein 4, then oblique; subterminal line indistinct, yellow defined on each side by brownish and with dark mark before it on costa, excurved at middle; a fine terminal brown line. Hind wing pale yellow with traces of a sinuous postmedial shade.

Hab. E. Turkestan, Ili, Charkhodé. *Exp.* 56 millim. This species is unknown to me.

4339. Hydrœcia immanis. (Plate CXXXVII. fig. 29.)

Hydrœcia immanis, Guen. Noct. i. p. 128 (1852); Smith, Cat. Noct. N. Am. p. 175.

Head and thorax rufous mixed with ochreous white; tegulæ with red-brown and white line at tips; patagia with red-brown and whitish line near base, the patagia and metathoracic crest tipped with brown and white; abdomen pale ochreous, ventrally tinged with rufous. Fore wing ochreous irrorated with brown, the medial area except towards costa and the terminal area suffused with rufous, the veins slightly streaked with brown; subbasal line slight, curved, from costa to submedian fold; a brownish mark in cell and diffused bar from submedial fold to inner margin before the antemedial line which is incurved in cell, then sinuous; claviform faintly defined by red-brown; orbicular and reniform very large, defined by red-brown except above, the former elliptical with irregular outer edge, the latter somewhat constricted at middle; an indistinct medial brown line excurved to median nervure, then oblique; postmedial line red-brown defined on outer side by pale ochreous, bent outwards below costa, then oblique and very slightly curved; subterminal line red-brown, indistinctly double and filled in with ochreous, excurved below vein 7 and at middle; a red-brown terminal line; cilia brown with ochreous line at base. Hind wing yellowish white faintly tinged with red-brown except at base; a slightly curved brown postmedial line, faint diffused sinuous subterminal line and fine terminal line; the underside pale yellow, the costal and terminal areas slightly tinged with rufous, a sinuous rufous postmedial line curved inwards to costa.

Hab. U.S.A., New York (*Doubleday*), 1 ♂, 2 ♀ type, Illinois, Virginia, Washington, Colorado, Denver, 1 ♂. *Exp.* 50–56 millim.

4340. Hydrœcia petasitis.

Hydrœcia petasitis, Doubl. Zoologist, v. p. 1914 (1847); Staud. Cat. Lep. pal. p. 186.

Gortyna vindelicia, Frr. Neue Beitr. vi. p. 82, pl. 531. f. 3 (1849); Herr.-Schäff. Eur. Schmett., Noct. ff. 521–3.

Head and thorax red-brown mixed with grey; tegulæ with slight

red-brown medial line; abdomen greyish ochreous suffused with brown. Fore wing ochreous suffused and irrorated with red-brown, the outer half of medial area except towards costa and terminal area deeper red-brown, the costal area and veins irrorated with whitish; subbasal line represented by double red-brown striæ from costa and cell; antemedial line red-brown, slightly incurved below costa, then excurved; orbicular and reniform large, greyish, the former rather quadrate and defined by brown on inner side, the latter slightly defined by red-brown; an indistinct diffused curved medial brown line; postmedial line red-brown defined on outer side by greyish ochreous, bent outwards below costa and very oblique below vein 6, some whitish points beyond it on costa; subterminal line indistinct, pale, excurved at vein 7, excurved and slightly waved at middle; a fine red-brown terminal line; cilia with slight brown line near base. Hind wing greyish suffused with red-brown; a slight discoidal point, indistinct slightly curved postmedial line and fine terminal line; the underside whitish, the costal and terminal areas tinged and irrorated with red-brown, a small discoidal spot, sinuous postmedial line and slight subterminal line.

Hab. Britain, Scotland, England (*Douglas*, *McLachlan*), Leech Coll.; S. Germany, Zeller and Leech Colls.; Austria, Styria, Transylvania; Switzerland; Rumelia; W. Siberia, Altai. *Exp.* 44–52 millim.

Larva. Meyr. Brit. Lep. p. 119; Barrett, Lep. Brit. v. p. 71, pl. 191. f. 2. Grey-white; warts black; head and thoracic plate brown. Food-plant: roots and stems of *Petasites*. 6–7.

4341. **Hydrœcia amurensis.** (Plate CXXXVII. fig. 30.)

Hydrœcia amurensis, Staud. Rom. Mém. vi. p. 465 (1892); id. Cat. Lep. pal. p. 186.

Head and thorax red-brown mixed with ochreous; abdomen yellow dorsally tinged with red-brown. Fore wing ochreous almost wholly suffused with red-brown and slightly irrorated with dark brown, the postmedial area rather paler except towards costa; subbasal line represented by a slight red-brown striga from costa with some yellowish beyond it; antemedial line red-brown, slightly angled outwards below costa and incurved in cell, then excurved; claviform faintly defined by red-brown; orbicular and reniform yellowish defined by red-brown, the former erect elliptical, the latter large; medial line dark brown, rather diffused, oblique to below angle of cell and incurved in cell, then inwardly oblique to inner margin; postmedial line red-brown, bent outwards below costa, then very oblique and slightly excurved, some slight yellowish points beyond it on costa; subterminal line yellowish defined on inner side by dark brown, excurved below vein 7 and at middle: a waved dark brown terminal line; cilia with yellowish line at base. Hind wing pale yellowish suffused in parts with brown, the veins brown; an oblique slightly sinuous brown postmedial line, a diffused subterminal band and fine brown terminal line; the underside

yellowish white irrorated with brown, the postmedial line excurved below costa, then sinuous, the subterminal band indistinct.

Hab. E. Siberia, Amurland, Ussuri; Japan, Hakodaté (*Andrews, Leech*), 1 ♂, 1 ♀, Nemoro (*Leech*), 2 ♀, Yokohama (*Pryer, Lewis*), 2 ♂. *Exp.* 40–54 millim.

4342. Hydrœcia micacea.

Noctua micacea, Esp. Schmett. pl. 145. f. 6 (1789); Sepp, Ins. iv. pls. 38, 39; Dup. Lép. Fr. vii. p. 243, pl. 115. f. 6; Frr. Neue Beitr. pl. 117; Curt. Brit. Ent., Lep. pl. 252; Steph. Ill. Brit. Ent., Haust. iii. p. 69; Staud. Cat. Lep. pal. p. 186.
Noctua cypriaca, Hübn. Eur. Schmett., Noct. f. 224 (1802).

Head and thorax rufous slightly mixed with ochreous; antennæ with the shaft whitish at base; abdomen ochreous dorsally tinged with brown, ventrally with rufous. Fore wing ochreous more or less suffused with bright rufous or purplish rufous, deeper before the postmedial line; subbasal line rufous, from costa to vein 1; antemedial line red-brown, slightly angled outwards below costa, oblique to submedian fold, then erect; claviform faintly defined by rufous; orbicular and reniform large, yellowish defined by rufous, the former round, open above; medial line indistinct, rufous, oblique from costa to reniform, inwardly oblique from lower angle of cell to inner margin: postmedial line red-brown, strongly bent outwards below costa, then very oblique; postmedial area rather

Fig. 12.—*Hydrœcia micacea*, ♂. ¾.

yellower with the veins slightly streaked with brown; subterminal line indistinct, rufous, angled outwards at vein 7 and slightly excurved at middle; a red-brown terminal line; cilia with yellowish line at base. Hind wing pale yellow suffused in parts with brown, the veins brown; an oblique brown postmedial line and brown terminal line except towards tornus; the underside yellowish white, the costal and terminal areas irrorated with red-brown, a slight discoidal spot and rather diffused sinuous postmedial line.

Hab. Canada, New Brunswick, St. Johns', Nova Scotia, Cape Breton I., 1 ♂; Britain, Leech Coll.; France, Sand Coll.; Denmark, Frey Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; N. Italy; Dalmatia, Leech Coll.; Russia, Esthonia, Zeller & Frey Colls., Livonia, Zeller Coll.; W. Turkestan, Ala Tau; W. Siberia, Altai, 1 ♂, Zeller Coll.; E. Turkestan, Ili; E. Siberia, Amur, Ussuri. *Exp.* 40–50 millim.

Larva. Meyr. Brit. Lep. p. 119; Barrett, Lep. Brit. v. p. 68, pl. 191. f. 2. Dull brownish ochreous tinged with purple; subspiracular line paler; warts blackish; head ochreous brown; thoracic plate edged with blackish in front. Food-plants: stems of *Equisetum*, *Valeriana*, *Rumex*, etc. 5–7; in Canada in the stems of corn.

4343. **Hydrœcia perobliqua**, n. sp. (Plate CXXXVII. fig. 31.)

♂. Head and thorax bright rufous mixed with yellow; antennæ whitish at base; tegulæ with rufous line near tips; pectus with some white; abdomen yellowish tinged with rufous, the basal crest dark at tip. Fore wing yellow suffused with bright rufous, slightly deeper before the postmedial line, the postmedial area somewhat paler; subbasal line represented by slight rufous striæ from costa and cell; antemedial line rufous, angled outwards below costa, oblique to submedian fold, then inwardly oblique and angled inwards on vein 1; orbicular and reniform defined by fine brown lines, the former round, the latter broad; medial line indistinct, angled outwards on subcostal and median nervures, then oblique; postmedial line brown defined by yellow on outer side, bent outwards below costa, excurved to vein 6, then very oblique; subterminal line yellow defined on inner side by an oblique brown bar from costa, then slightly by brown, excurved below vein 7 and at middle; a brown terminal line; cilia red-brown with a rufous line at base. Hind wing yellowish white; a slight brownish terminal line.

Hab. Canada, Manitoba, Winnipeg, 1 ♂ type. *Exp.* 32–34 millim. Cotypes in Coll. Bird.

4344. **Hydrœcia stramentosa.** (Plate CXXXVIII. fig. 1.)

Hydrœcia stramentosa, Guen. Noct. i. p. 129, pl. 6. f. 2 (1852); Smith, Cat. Noct. N. Am. p. 175.

♀. Head and thorax pale yellow; palpi tinged with rufous; frons with slight lateral rufous bars; tegulæ edged with rufous; patagia edged with rufous above; fore tibiæ and tarsi tinged with rufous; abdomen pale yellow, the anal tuft tinged with rufous. Fore wing pale yellow slightly suffused in parts with olive-green, especially before postmedial line, the costal area tinged with purplish pink, the postmedial area rather paler; subbasal line indistinct, rufous, from costa to submedian fold; diffused rufous bars from costa to median nervure and submedian fold to inner margin before the antemedial line, which is rufous, slightly excurved below costa, incurved in cell, then excurved; claviform faintly defined by rufous; orbicular and reniform large, faintly defined by rufous, the former rather elliptical, open above and below, the latter somewhat constricted at middle; postmedial line rufous, slightly bent outwards below costa and very oblique below vein 5, touching lower extremity of reniform; subterminal line slight, rufous, angled outwards at vein 7, inwards in discal fold and excurved at middle;

a rufous terminal line; cilia yellowish at base, rufous intersected with yellowish at tips. Hind wing yellowish white.

Hab. U.S.A., Middle and Central States, New York (*Doubleday*), 2 ♀ type, Illinois, Colorado, Glenwood Springs, Denver. *Exp.* 36–46 millim.

4345. **Hydrœcia diplocyma**, n. sp. (Plate CXXXVIII. fig. 2.)

Hydrœcia stramentosa, Moffat, Can. Ent. xxxii. p. 61, pl. 2. f. 5 (nec Guen.).

Head and thorax pale yellow mixed with rufous; palpi tinged with rufous; tegulæ with rufous line near tips and a brown line behind them; patagia with brown line near upper edge; metathoracic crest tipped with rufous; fore legs suffused with rufous; abdomen pale yellow, the basal crest tipped with blackish, the anal tuft and ventral surface tinged with rufous. Fore wing pale yellow suffused with olive-green, rather more strongly before postmedial line, the costal area tinged with purplish pink, the postmedial area not tinged with olive, the terminal area slightly tinged; subbasal line indistinct, rufous, curved, from costa to vein 1; the antemedial area with brownish marks on costa, below cell and at vein 1; antemedial line brown, incurved in cell, then excurved; claviform represented by a diffused red-brown mark; orbicular and reniform yellowish defined by brown, the former elliptical, open above, the latter slightly angled inwards on median nervure, some red-brown suffusion between them in cell; a faint oblique line from lower angle of cell to inner margin; post-medial line red-brown, bent outwards below costa, oblique and very slightly incurved below vein 5; subterminal line with diffused red-brown bar from costa, angled outwards at vein 7 and inwards in submedian fold, then double, waved; a deep rufous terminal line; cilia yellow tinged with rufous and mixed with red-brown at tips. Hind wing yellowish white with slight rufous terminal line; the underside with the costal area faintly tinged with rufous.

Hab. Canada, 1 ♀, Montreal (*A. F. Winn*), 1 ♂ type; U.S.A., Colorado. *Exp.* 46–52 millim.

4346. **Hydrœcia juvenilis.** (Plate CXXXVIII. fig. 3.)

Gortyna juvenilis, Grote, Bull. U.S. Geol. Geog. Surv. Terr. vi. p. 267 (1881); Smith, Cat. Noct. N. Am. p. 174.

Head and thorax yellow slightly mixed with red-brown; patagia red-brown at tips; abdomen rufous mixed with red-brown. Fore wing bright yellow slightly irrorated with rufous, the medial area except towards costa and the area beyond subterminal line suffused with rufous; antemedial line rufous, oblique, sinuous; claviform rather small defined by rufous; orbicular and reniform yellow defined by rufous, the former round; medial line dark brown, oblique from lower angle of cell to inner margin; postmedial line strongly bent outwards below costa, then oblique, dentate, some

rufous suffusion beyond it on costa with yellow points on it; subterminal line arising from termen below apex, incurved at discal and submedian folds, excurved at middle; a terminal red-brown line; cilia yellow mixed with rufous. Hind wing dark red-brown; cilia yellow and red-brown; the underside rather paler, thickly irrorated and suffused with red-brown, an indistinct sinuous postmedial line.

Hab. U S.A., Kansas, Colorado (*Snow*), 1 ♀ type; New Mexico, Beulah (*Cockerell*), 2 ♂. *Exp.* 32 millim.

*4347. Hydrœcia mœsiaca.

Gortyna mœsiaca, Herr.-Schäff. Eur. Schmett. ii. p. 218, Noct. f. 50 (1845); Staud. Cat. Lep. pal. p. 186.

♀. Head, thorax, and abdomen yellow tinged with rufous; palpi rufous with yellow ring at extremity of 2nd joint; tegulæ with faint rufous medial band; patagia edged with brown; abdomen with lateral red-brown stripes. Fore wing yellow irrorated and in parts slightly suffused with rufous, the veins red-brown; subbasal line double, rufous, waved, from costa to vein 1; antemedial line rufous, double, the inner line indistinct, oblique, sinuous; claviform short and broad, defined by rufous; orbicular defined by rufous and with rufous point in centre, rather irregularly rounded; reniform large, defined by rufous, its centre also defined by rufous, rather constricted at middle; medial line rufous, excurved from costa to median nervure, then oblique; postmedial line double, bent outwards below costa, then oblique, the inner line waved, the outer slightly incurved below vein 3; subterminal line indistinct, yellow, defined on inner side by rufous suffusion, very slightly excurved below vein 7 and at middle; a fine waved dark terminal line; cilia yellow at base, brown at tips. Hind wing glossy yellowish white, the veins tinged with red-brown; a fine red-brown terminal line; the underside with the costal area irrorated with red-brown, a diffused red-brown mark at middle of costa and diffused curved postmedial line.

Hab. Bulgaria, in Coll. Püngeler; Turkey; Armenia. *Exp.* 60 millim.

4348. Hydrœcia leucographa.

Noctua leucographa, Borkh. Eur. Schmett. iv. p. 470 (1792); Brahm, Scriba Beitr. Ins. iii. p. 252, pl. 18. f. 1 (1793); Staud. Cat. Lep. pal. p. 186.
Gortyna borelii, Pierret, Ann. Soc. Ent. Fr. vi. p. 449, pl. 16. f. 5 (1837).
Gortyna lunata, Frr. Neue Beitr. iii. p. 96, pl. 263. f. 1 & pl. 327. f. 3 (1839); Dup. Lép. Fr. Suppl. iii. p. 466, pl. 41. f. 1; Herr.-Schäff. Eur. Schmett., Noct. ff. 114 & 117–8.
Gortyna illunata, Guen. Noct. iii. p. 425 (1852).

Head and thorax brown mixed with grey, the tegulæ and upper edge of patagia tinged with rufous; antennæ with the shaft whitish

above; abdomen greyish ochreous suffused with brown. Fore wing pale yellow thickly irrorated and more or less suffused with red-brown, the cell, costal area from subbasal to medial line, and terminal area suffused with red-brown, the postmedial area greyish, tinged with red-brown towards costa, the veins streaked with red-brown; a white point at base; subbasal line double, rufous filled in with yellow, waved, from costa to vein 1, a white point beyond it in cell; antemedial line red-brown defined by yellow on outer side at costa, angled outwards below costa, then incurved, traversing the claviform which is white defined by red-brown and bisected by a red-brown streak in submedian fold; orbicular and reniform white defined by red-brown, the former round with red-brown spot in middle, the latter broken up by brown streaks on the veins and with curved whitish line in middle defined by brown; medial line red-brown, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line double, red-brown, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then oblique and slightly incurved between veins 3 and 2; subterminal line slight, red-brown defined by yellowish white on outer side towards costa, angled outwards at vein 7, then dentate and excurved at middle; a waved red-brown terminal line; cilia greyish brown with a slight dark line through them. Hind wing yellowish white suffused in parts with reddish brown, the veins brown, a faint sinuous postmedial line and traces of diffused subterminal band; a waved brown terminal line and the cilia tinged with brown from apex to vein 2; the underside with the costal area tinged and irrorated with rufous, a curved red-brown postmedial line.

Hab. France, Sand Coll.; Germany, Leech Coll.; Austria, Galicia; Hungary, Leech Coll.; Corsica. *Exp.* 56–66 millim.

Larva. Kirby, Butt. & Moths Eur. p. 187; Hffm. Raup. p. 103.

Pale pinkish with dark dorsal line. Food-plant: stems of *Peucedanum officinale*. 10–7.

Sect. V. Antennæ of male ciliated.

A. Fore wing with the postmedial line oblique below vein 4.
  a. Fore wing with the markings indistinct, the medial area not strongly contrasting ..... *xanthenes.*
  b. Fore wing with the markings distinct, the medial area yellow and strongly contrasting ..... *fortis.*
B. Fore wing with the postmedial line evenly excurved from below costa to inner margin ..... *basalipunctata.*

4349. Hydrœcia xanthenes.

Gortyna xanthenes, Germ. Faun. Ins. Eur. xxii. pl. 22 (1844); Herr.-Schäff. Eur. Schmett., Noct. f. 119; Mill. Icones, ii. p. 172, pl. 69, ff. 10, 11; Rmbr. Cat. Lep. And. pl. 12. f. 3; Staud. Cat. Lep. pal. p. 186.

Head and thorax yellowish white suffused with rufous; abdomen silky yellowish white slightly tinged with rufous. Fore wing pale silky yellow suffused with rufous, a white point at base; subbasal

line represented by yellowish marks below costa and cell and with a white point beyond it in cell; antemedial line very indistinct, with some darker suffusion before it, inwardly oblique below the cell; claviform represented by a yellowish patch; orbicular and reniform pale yellow tinged with rufous and faintly defined by brown, the former round, the latter with its centre faintly defined by rufous and its annulus broken up by slight streaks on the veins; an indistinct curved red-brown medial line; postmedial line indistinct, double, bent outwards below costa, then minutely waved,

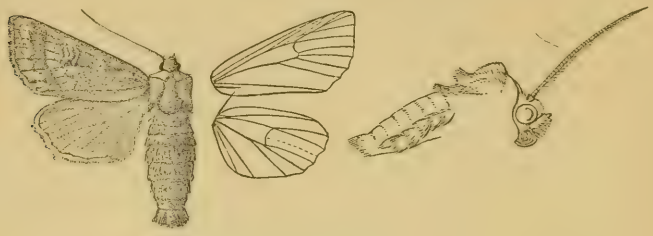


Fig. 13.—*Hydræcia xanthenes*, ♂. ½.

oblique below vein 4; subterminal line represented by a very indistinct yellowish minutely waved band; a slight waved brown terminal line; cilia red-brown with a faint dark line near base. Hind wing yellowish tinged with red-brown; the underside with faint curved postmedial line.

Hab. S. France; Spain, Andalusia; Sicily, Frey and Leech Colls. *Exp.* 50–56 millim.

Larva. Hffm. Raup. p. 103.

Red-brown; each segment with a dark mark; thoracic plate with two brown shields; head brown. Food-plants: *Cynara scolymus* and *Cardunculus*. 10.

4350. Hydræcia fortis.

Ochria fortis, Butl. A. M. N. H. (5) i. p. 83 (1878); id. Ill. Het. B. M. ii. p. 23, pl. 28. f. 9; Staud. Cat. Lep. pal. p. 187.

Head and thorax yellow mixed with red-brown; palpi and frons red-brown; tegulæ and patagia edged with red-brown; pectus and legs suffused with red-brown; abdomen yellow tinged with red-brown. Fore wing yellow irrorated with red, the antemedial, postmedial, and terminal areas red-brown, the veins streaked with red-brown; subbasal line indistinct, red defined by yellow on outer side, waved, from costa to vein 1, a yellow point beyond it in cell; antemedial line indistinct, brown, excurved to median nervure, angled inwards in submedian fold, then very oblique to inner margin; claviform large, defined by brown, extending to cell; orbicular and reniform defined by brown, the former round, the

latter large; medial line red, oblique from costa to reniform, inwardly oblique below the cell and slightly angled outwards in submedian fold; postmedial line double filled in with yellow, the inner line indistinct, red, minutely waved, bent outwards below costa, excurved to vein 5, then oblique and slightly excurved at submedian fold, some yellow points beyond it on costa; subterminal line indistinct, brown, excurved below vein 7 and at middle, a yellow patch beyond it at apex; a fine brown terminal line. Hind wing red-brown with a greyish tinge; the underside whitish tinged with red-brown, an indistinct sinuous postmedial line.

Hab. Japan, Tokio (*Maries*), 1 ♀, Yokohama (*Jonas*, *Pryer*), 2 ♂, 2 ♀ type. *Exp.* 38–56 millim.

4351. Hydrœcia basalipunctata.

Gortyna basalipunctata, Græs. Berl. ent. Zeit. xxxii. p. 341 (1888); Hmpsn. Moths Ind. ii. p. 171; Staud. Cat. Lep. pal. p. 187.
Gortyna intermixta, Swinh. Trans. Ent. Soc. 1891, p. 480, pl. 19. f. 11.

Head and thorax red-brown mixed with ochreous; tegulæ and patagia yellow mixed with fiery red and edged with red-brown; abdomen ochreous suffused with red-brown. Fore wing yellow thickly irrorated with fiery red, the antemedial area towards costa and inner margin and the terminal area suffused with red-brown; subbasal line fiery red defined by yellow on outer side, waved, from costa to vein 1; antemedial line indistinctly double, red-brown filled in with yellow, somewhat inwardly oblique from cell to above vein 1 and strongly bent outwards above inner margin; claviform large, defined by red-brown and extending to cell; orbicular and reniform yellow irrorated with red and defined by brown, the former round, the latter rather quadrate with its centre defined by red; medial line red-brown, oblique from costa to median nervure, inwardly oblique and somewhat sinuous from lower angle of cell to inner margin; postmedial line red-brown, double and filled in with yellow towards costa, bent outwards below costa, excurved to vein 4, then obliquely curved to inner margin, some slight yellowish points beyond it on costa; an indistinct brown subterminal line, incurved below costa, then waved, a yellow patch irrorated with red beyond it at apex; a fine brown terminal line. Hind wing pale yellow suffused with red-brown especially on terminal area; traces of a sinuous postmedial line; a fine brown terminal line; the underside with the costal and terminal areas tinged and irrorated with red-brown, a brown postmedial line slightly excurved below costa.

Hab. E. Siberia, Ussuri, 1 ♀; Japan, Hakodaté (*Leech*), 1 ♀, Oiwaké (*Pryer*), 1 ♂; Assam, Khásis (*Badgley*), 1 ♂, 1 ♀ type *intermixta*. *Exp.* 34–48 millim.

Genus BRACHYXANTHIA.

Brachyxanthia, Butl. A. M. N. H. (5) i. p. 169 (1878) ..... Type. *zelotypa*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint extending to well beyond frons and fringed with long hair in front, the 3rd moderate; frons smooth, with large tuft of hair; eyes large, round; antennæ of male serrate and fasciculate; thorax clothed with scales and hair mixed, the tegulæ produced to a slight dorsal ridge, the prothorax with sharp triangular crest, the metathorax with double ridge-like crest; tibiæ fringed with long hair; abdomen without crests. Fore wing short and broad, the apex produced and acute, the termen strongly excurved at middle and crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4352. Brachyxanthia zelotypa.

Xanthia zelotypa, Led. Verh. zool.-bot. Ges. Wien, 1853, p. 373, pl. 3. f. 4; Staud. Cat. Lep. pal. p. 207.
Brachyxanthia peculiaris, Butl. A. M. N. H. (5) i. p. 169 (1878); id. Ill. Lep. Het. B. M. ii. p. 31, pl. 30. f. 11.

Head and thorax yellow slightly mixed with rufous; antennæ brown except at base; vertex of head, tegulæ and tips of crests with red-brown streak; abdomen yellow irrorated with brown. Fore wing yellow irrorated with red, the veins streaked with red-brown; subbasal line red, angled outwards in cell and ending at vein 1; antemedial line red, very oblique from costa to submedian fold, then inwardly oblique; claviform defined by red, rounded: orbicular and reniform defined by red-brown, the former round, the latter rather irregularly rounded; medial line strong, red-brown,

Fig. 14.—*Brachyxanthia zelotypa*, ♂. ½.

very oblique from costa to lower angle of cell, then inwardly oblique to inner margin at antemedial line; postmedial line fine, brown, bent outwards below costa, oblique to vein 6, oblique and sinuous below vein 4, met at vein 6 by an oblique streak from apex; subterminal line dentate, curved, incurved below vein 3 and ending at tornus; a fine waved brown terminal line. Hind wing yellowish white suffused with brown except on costal area and termen from apex to submedian fold; the underside yellowish white, the costal area rather yellower.

Hab. W. Siberia, Altai; E. Siberia, Ussuri; Japan, Hakodaté, 1 ♂ type *peculiaris*, Tokio (*Maries*), 1 ♀, Yokohama (*Jonas*), 1 ♀.
Exp. 32 millim.

Genus **RHODŒCIA**, nov.

Type, *R. aurantiago.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, the prothorax with sharp ridge-like crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; the fore tarsus with curved claw-like spines on outer side of the joints; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4353. **Rhodœcia aurantiago.**

Xanthia aurantiago, Guen. Noct. i. p. 394, pl. 7. f. 1 (1852); Smith, Cat. Noct. N. Am. p. 219.
Pyrrhia illiterata, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 211.
Orthosia differta, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 67.
Heliothis illinoisensis, French, Can. Ent. xi. p. 77 (1879).

♂. Head and thorax crimson-red, the scales slightly tipped with grey, the tegulæ and patagia with blackish tips; abdomen fulvous yellow. Fore wing purplish red, the medial area more orange-red, the terminal area slightly irrorated with black; subbasal line blackish, waved, from costa to submedian fold; antemedial line blackish, waved, nearly erect; orbicular and reniform hardly traceable, defined by a few dark scales; postmedial line black, bent outwards below costa, then crenulate and produced to black points

Fig. 15.—*Rhodœcia aurantiago*, ♂. ½.

on the veins, incurved below vein 4; a subterminal series of very faint blackish spots, excurved below vein 7 and at middle; cilia purplish crimson. Hind wing ochreous almost entirely suffused with purplish crimson; the underside ochreous with the costal and terminal areas suffused with purplish crimson.

♀. Fore wing more uniform fulvous red, the orbicular and reniform more distinct, the former round, the latter defined by black points and constricted at middle, the postmedial line with fuscous shade on outer edge, the subterminal series of spots more distinct, a terminal series of black points. Hind wing with traces of diffused dark subterminal band; the underside with postmedial line, terminal series of slight lunules, and dark line through the cilia.

Hab. U.S.A., Massachusetts, 1 ♀ type *illiterata*, New York, Wisconsin, Illinois, Mendota, 1 ♀, Florida (*Doubleday*), 1 ♂ type, Missouri. *Exp.* ♂ 32, ♀ 36 millim.

Genus PYRRHIA.

	Type.
Pyrrhia, Hübn. Verz. p. 233 (1827)	*purpurina*.

Proboscis fully developed; palpi upturned, the 2nd joint hardly reaching middle of frons and fringed with long hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male almost simple and somewhat laminate; thorax clothed entirely with hair and with slight dorsal ridge-like crest; tibiæ fringed with long hair; abdomen with dorsal crest at base only. Fore wing with the apex slightly produced and acute, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of disco-cellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the ground-colour not orange.	
a. Fore wing with the terminal area bright pink	*treitschkei*.
b. Fore wing with the terminal area yellowish white	*victorina*.
c. Fore wing with the terminal area suffused with crimson	*purpurina*.
B. Fore wing with the ground-colour orange.	
a. Fore wing with the subbasal and antemedial lines and the stigmata present	*umbra*.
b. Fore wing with the subbasal and antemedial lines and the stigmata absent	*stilla*.

4354. Pyrrhia treitschkei.

Heliothis treitschkei, Friv. Tarsus Evkönyv. ii. p. 273, pl. 7. f. 8 (1835); Staud. Cat. Lep. pal. p. 223.
Heliothis taurica, Herr.-Schäff. Eur. Schmett. ii. p. 368, Noct. ff. 263–4 (1846).

Head pale yellow, the palpi, frons, antennæ, and a bar between them bright pink; thorax bright pink, the tegulæ with a purplish tinge; pectus and legs pink, the tarsi yellowish tinged with brown; abdomen pale yellow tinged with brown, the terminal segments pink. Fore wing with the basal half pale yellow with large pink patch on basal costal area; antemedial line very oblique and pink from costa to subcostal nervure, then brown, inwardly oblique and ending at vein 1; reniform pink defined by deep pink, and with deep pink patch above it on costa; outer half of median area from beyond and below the cell to inner margin brown; postmedial line yellow, rather diffused at costa, oblique to vein 4, where it is angled, then inwardly oblique; terminal area bright pink. Hind wing brown, the inner margin whitish; cilia pink except towards tornus: the underside whitish tinged with brown, the costal area suffused with pink, a faint diffused sinuous brownish band just beyond middle.

Hab. Balkan States, Bulgaria (*Mrs. Nicholl*); Turkey, Zeller Coll.; Armenia, Caucasus, Leech Coll.; Asia Minor, Pontus, Leech Coll., Bithynia, Taurus; Syria; W. Turkestan, Turcomania. *Exp.* 30–34 millim.

Larva. Kirby, Butt. & Moths Eur. p. 263; Hffm. Raup. p. 139.
Reddish grey, with dorsal series of reddish-brown triangular spots. Food-plant, *Melissa*. 6.

4355. Pyrrhia victorina.

Heliothis victorina, Sodofsky, Stett. ent. Zeit. 1849, p. 130; Herr.-Schäff. Eur. Schmett., Noct. f. 552; Frr. Neue Schmett. pl. 576. f. 2; Staud. Cat. Lep. pal. p. 223.
Chariclea prazanoffzkyi, Guen. Noct. ii. p. 169 (1852).

Head pale yellow suffused with crimson; antennæ pink with a crimson bar between their bases; thorax pale yellow with purplish-pink bands on and behind tegulæ, a slight oblique streak on patagia and the metathorax edged with purplish; pectus pale yellow, the legs pink and the tarsi brownish; abdomen pale yellow suffused with brown. Fore wing pale yellow, the veins streaked with crimson; a very faint curved pink antemedial line from cell to inner margin; a diffused pink medial line oblique from costa to lower angle of cell, incurved to submedian fold and excurved to inner margin; postmedial line deep pink, rather diffused, oblique, arising from costa towards apex; subterminal line pink, arising at vein 7, excurved to vein 2, then slightly incurved; a fine brown terminal line, pink towards tornus. Hind wing yellowish white irrorated with brown, the veins brown, the termen tinged with pink; a diffused brown subterminal band with somewhat dentate outer edge; a pink terminal line; cilia yellowish white, the underside yellowish white, the costal and terminal areas faintly tinged with pink.

Hab. Servia; Bulgaria (*Mrs. Nicholl*); Turkey, Leech Coll.; S. Russia, Zeller Coll.; Armenia, Caucasus, Leech Coll.; Asia Minor, Amasia, Zeller and Frey Colls. *Exp.* 32–36 millim.

Larva. Kirby, Butt. & Moths Eur. p. 263; Hffm. Raup. p. 139.
Green or reddish violet with darker dorsal and lateral lines and small black warts. Food-plants: *Salvia* and *Dictamnus*. 5–6.

4356. Pyrrhia purpurina.

Noctua marginata, Don. Brit. Ins. v. pl. 150. f. 1 (1796), nec Fabr.
Noctua purpurina, Esp. Schmett. iv. pl. 195. f. 2 (1798).
Noctua rutilago, Hübn. Eur. Schmett., Noct. f. 519 (1818), nec Schiff.
Heliothis purpurites, Treit. Schmett. Eur. v. 3, p. 234 (1826); Geyer, Eur. Schmett., Noct. ff. 759–763 (1833); Frr. Beitr. pl. 136; Staud. Cat. Lep. pal. p. 224.
Pyrrhia purpurago, Hübn. Verz. p. 233 (1827).

Head and thorax olive-ochreous suffused with purplish pink; abdomen olive-ochreous, the crests, anal tuft and ventral surface tinged with pink. Fore wing olive-ochreous irrorated with crimson, the terminal half suffused with crimson except the postmedial area towards costa and in submedian interspace, the veins streaked with crimson; subbasal line crimson, straight, from costa to submedian

fold; antemedial line crimson, excurved below costa and cell, angled inwards on median nervure and ending at vein 1; claviform very faintly defined by crimson; orbicular and reniform large, defined by crimson, the former round with some crimson scales in centre, the latter with its upper extremity produced and with crimson suffusion in centre; a strong crimson medial line oblique from costa to lower angle of cell, then inwardly oblique; postmedial line crimson, bent outwards below costa, oblique and slightly sinuous below vein 6,

Fig. 16.—*Pyrrhia purpurina*, ♂. ½.

some slight olive points beyond it on costa; subterminal line crimson, slightly angled outwards at veins 7, 6, 4, 3, 2; a fine crimson terminal line; cilia olive suffused with crimson and with slight crimson line near base. Hind wing ochreous tinged with brown except towards costa; the veins and an indistinct discoidal lunule brown; the terminal area broadly brown, the termen tinged with crimson; cilia ochreous tinged with crimson at base; the underside olive-ochreous, the costal area irrorated with crimson, slight diffused medial and postmedial crimson lines on costal area, a small brown discoidal spot.

Hab. Hungary, Zeller, Frey, and Leech Colls.; Rumelia; S. Russia, Leech Coll.; W. Siberia, Altai. *Exp.* 30–36 millim.

Larva. Kirby, Butt. & Moths Eur. p 263; Hffm. Raup. p. 139, pl. 36. f. 3.

Yellow or dark apple-green or brownish red with dark warts, dorsal line dark; two yellowish subbasal lines. Food-plants: *Centaurea scabiosa* and *Succisa pratensis*. 5.

4357. Pyrrhia umbra.

Phalæna umbra, Hüfn. Berl. Mag. iii. p 294 (1767); Hmpsn. Moths. Ind. ii. p. 172; Smith, Cat. Noct. N. Am. p. 216; Staud. Cat. Lep. pal. p. 224.

Noctua marginata, Fabr. Syst. Ent. p. 610 (1775); Dup. Lép. Fr. vii. pt. i. p. 319, pl. 119. f. 8; Steph. Ill. Brit. Ent., Haust. iii. p. 108.

Noctua rutilago, Schiff. Wien. Verz. p. 86 (1776); Hübn. Eur. Schmett., Noct. f. 185.

Noctua conspicua, Bork. Eur. Schmett. iv. p. 123 (1792).

Noctua umbrago, Esp. Schmett. iv. pl. 185. ff. 7, 8 (1796).

Noctua marginago, Haw. Lep. Brit. p. 235 (1809).

Heliothis cilisca, Guen. Noct. ii. p. 179 (1852).

Heliothis exprimens, Wlk. xi. 687 (1857); Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 35, pl. iii. f. 5.

Pyrrhia angulata, Grote, Trans. Am. Ent. Soc. v. p. 93 (1874); id. Bull. Buff. Soc. Nat. Sci. ii. pl. iii. f. 6 (1875).

Hydræcia tibetana, Moore, A. M. N. H. (5) i. p. 232 (1878); id. 2nd Yarkand Mission, Lep. p. 9, pl. 1. f. 21.
Chariclea vexilliger, Christ. Iris, vi. p. 92 (1893); Staud. Cat. Lep. pal. p. 223.
Pyrrhia aconiti, Holtz. Allg. Zeitschr. Ent. vii. p. 212 (1902).

Head and thorax rufous, the latter with some ochreous; abdomen ochreous suffused with rufous. Fore wing ochreous suffused with rufous, the postmedial area rather browner except at costa, the veins streaked with rufous; subbasal line rufous, curved, from costa to submedian fold; antemedial line rufous, angled inwards on median nervure and vein 1, outwards below cell and excurved above inner margin; claviform slightly defined by rufous, large and extending to cell; orbicular and reniform defined by rufous and with some rufous in centres, the former round, the latter large; medial line rufous, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line rufous, strongly bent outwards below costa, then very oblique and slightly sinuous, some whitish points beyond it on costa; subterminal line rufous, slightly angled outwards at veins 7, 6, 4, 3, 2; a fine rufous terminal line. Hind wing ochreous, the inner area tinged with brown, the veins and an ill-defined discoidal lunule brown; a broad rather diffused fuscous subterminal band leaving the termen ochreous tinged with rufous; cilia yellowish white; the underside yellowish white, the costal area suffused with rufous; a small discoidal spot; a curved postmedial line from costa to submedian fold with diffused rufous band beyond it.

Ab. 1. *exprimens*. Fore wing with the postmedial and terminal areas suffused with red-brown.—Canada and U.S.A.

Ab. 2. *cilisca*. Hind wing paler yellow, the postmedial band pale crimson.—U.S.A. and ? Brazil.

Hab. Canada, 1 ♂, Ontario, Orilla (*Bush*), 1 ♂ type *exprimens*, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., Eastern and Central States, New York (*Riley*), 2 ♀, Buffalo, 2 ♂ type *angulata*, Kansas (*Snow*), 2 ♂, Colorado, California, Mendocino, 1 ♀; ? Brazil, type † *cilisca* in Coll. Oberthür; Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Frey Colls.; Austria; Hungary; Switzerland, Zeller Coll.; Italy; Scandinavia; Russia, Livonia, Zeller Coll., Sarepta, Leech Coll.; Asia Minor, Bithynia; Persia; W. Turkestan, Issyk Kul; W. Siberia, Altai; E. Siberia, Amurland, Ussuri; Japan, Oiwaké (*Pryer*), 2 ♂, Yokohama (*Pryer*), 1 ♀; Corea, Gensan (*Ito*), 1 ♀; C. China, Ichang (*Mrs. Pratt*), 1 ♀; Kashmir, Kiris (*Leech*), 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 2 ♀, Dharmsála (*Hocking*), 1 ♂, 1 ♀; Assam, Khásis (*Badgley*), 4 ♂, 1 ♀, Nagas. *Exp.* 32–44 millim.

Larva. Meyr. Brit. Lep. p. 119; Barrett, Lep. Brit. vi. p. 148, pl. 244. f. 4.

Dull green or dark grey speckled with white and dorsally with black; dorsal line double, whitish; subbasal line whitish or pale yellow; spiracular line yellowish or pale ochreous, white-edged above; warts black; head pale green or reddish ochreous; thoracic plate sometimes black. Food-plants: *Ononis* or *Geranium pratense*. 7–8; in Assam, *Siegesbeckia orientalis*. 10.

*4358. Pyrrhia stilla.

Pyrrhia stilla, Grote, N. Am. Ent. i. p. 45 (1879); Smith, Cat. Noct. N. Am. p. 216.

Head, thorax, and abdomen orange-red. Fore wing orange-red, the basal area bright orange without markings; stigmata obsolete; medial shade dark, strong, diffused on outer side, acutely angled outwards on median nervure; postmedial line dark, obsolete at costa, slightly incurved below vein 4 and excurved at vein 1; subterminal line indistinct; cilia bright red. Hind wing pale yellow, blackish at base; a blackish discoidal lunule and broad diffused terminal band, the termen tinged with red; the underside with faint discoidal mark, with reddish mark on costa above it, a diffused red postmedial band.

Hab. U.S.A., W. States, Colorado, Idaho Springs, New Mexico. *Exp.* 30 millim. This species is unknown to me.

Genus **CALLŒCIA**, nov.

Type, *C. svinhoei.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching to about middle of frons and moderately fringed with hair, the 3rd short; frons with large corneous prominence with raised edges, the lower edge produced to a plate grooved in front, a corneous plate below it; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4359. Callœcia svinhoei.

Anthœcia swinhœi, Butl. P. Z. S. 1883, p. 162; Hmpsn. Moths Ind. ii. p. 312.

Head and thorax red-brown; pectus and legs yellow, the tibiæ brown ringed with yellow; abdomen yellow irrorated with brown.

Fig. 17.— *Callœcia svinhoei*, ♂. ½.

Fore wing red-brown slightly irrorated with black; traces of a waved dark subbasal line from costa to submedian fold; antemedial line indistinct, blackish, waved; orbicular and reniform absent;

a diffused blackish medial line, oblique from costa to lower angle of cell, then waved; postmedial line indistinct, double, dentate, slightly bent outwards below costa and incurved below vein 4; subterminal line with brownish patch at costa, then indistinct and minutely waved. Hind wing orange-yellow with broad fuscous terminal band; cilia yellow mixed with brown; the underside yellow slightly irrorated with black, the costal and terminal areas tinged with red, a slight discoidal lunule, diffused curved medial line, minutely waved postmedial line and indistinct diffused subterminal band.

Hab. Bombay, Asirgarh (*Swinhoe*), 1 ♀ type, Poona (*Swinhoe*), 1 ♂, 3 ♀. *Exp.* 26–30 millim.

Genus **ERYTHRŒCIA**, nov.

Type, *E. suavis*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd short; frons with rounded prominence with corneous plate below it; eyes large, round; antennæ of male laminate, almost simple; thorax clothed with hair only and without distinct crests; tibiæ fringed with long hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing without pink beyond the postmedial band; hind wing with the apical area suffused with brown ..... *suavis.*
B. Fore wing with the whole postmedial area pink; hind wing almost wholly suffused with brown ..... *rhodophora.*

*4360. Erythrœcia suavis.

Heliothis suavis, H. Edw. Pap. iv. p. 45 (1884); Smith, Cat. Noct. N. Am. p. 271.

♂. Head, front half of thorax, a patch on metathorax, and tibiæ bright pink, the rest of thorax lemon-yellow; hair on pectus white;

Fig. 18.—*Erythrœcia suavis*, ♂. ½.

tarsi brownish. Fore wing bright lemon-yellow; the costal area bright pink; a waved pink antemedial band; orbicular and reniform

small points with some yellow at centres, the former round; a waved postmedial band expanding at costa and inner margin; a terminal series of cupreous-red points; cilia greenish yellow, pink at tips. Hind wing yellowish white, the apical area down to vein 4 tinged with rufous.

Hab. U.S.A., Colorado, Denver in U.S. Nat. Mus., New Mexico, Las Vegas. *Exp.* 36 millim.

4361. **Erythrœcia rhodophora**, n. sp. (Plate CXXXVIII. fig. 4.)

♂. Head and thorax bright crimson, the latter mixed with pale ochreous; pectus and legs ochreous white, the fore and mid femora fringed with crimson hair and the tibiæ crimson; abdomen ochreous white dorsally suffused with brown. Fore wing ochreous white; the costal area suffused with bright crimson to near middle; two slight crimson spots in basal part of cell; a broad oblique diffused antemedial crimson band from cell to just above inner margin; orbicular and reniform crimson, the former round, the latter irregular and with slight ochreous lunule in centre; postmedial area crimson, its outer edge angled outwards below vein 7 and excurved at middle and to termen towards tornus; a terminal series of slight crimson lunules. Hind wing ochreous white mostly suffused with fuscous brown, the veins and termen slightly tinged with crimson; the underside ochreous white, the veins tinged with crimson, an indistinct diffused crimson postmedial line, the terminal area slightly irrorated with crimson.

Hab. Guatemala, Capitello (*Rodriguez*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 34 millim.

Genus **COPIFRONTIA.**

Type.

Copifrontia, Hmpsn. Ann. S. Afr. Mus. iii. p. 433 (1905) ... *xantherythra.*

Proboscis fully developed; palpi obliquely upturned, rather slenderly scaled, the 2nd joint reaching about to middle of frons, the 3rd moderate; frons with vertical ridge-like corneous process, rounded in front; eyes large, round; antennæ of male with uniserrate serrations; thorax clothed with hair and hair-like scales, the prothorax with spreading crest, the vertex of thorax with ridge-like crest; tibiæ fringed with long hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell: 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 nearly fully developed from well above angle; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4362. **Copifrontia xantherythra.**

Copifrontia xantherythra, Hmpsn. Ann. S. Afr. Mus. iii. p. 433 (1905).

♂. Head and thorax bright yellow; palpi above and frons purplish pink; antennæ rufous; tegulæ, patagia, and vertex of

thorax with purplish-pink patches, the scales tipped with white; pectus and legs pale ochreous, the pectus and fore tibiæ pink in front; abdomen deep ochreous, the ventral surface pale ochreous. Fore wing bright yellow, the costal edge whitish; the basal area purplish pink, the scales tipped with white and with some yellow at base of cell and on inner margin, the outer edge of the area oblique and sinuous from costa to just below median nervure, then

Fig. 19.—*Copifrontia xantherythra*, ♂. $\frac{1}{1}$.

inwardly oblique and incurved at vein 1, a series of small pink spots beyond it with a curved mark beyond them at vein 1; orbicular defined by pink, round, conjoined to a large pink patch which extends obliquely from just below costa to the postmedial line beyond lower angle of cell and thence below the cell to below orbicular; a large yellow postmedial patch from costa to vein 5 with five small pinkish spots on it, the postmedial yellow line arising from its lower edge and obliquely incurved to the yellow patch on middle of inner area where it is only defined by small pinkish spots before and beyond it; terminal area purplish pink with a yellow patch at apex with slight oblique waved subterminal line from it to inner margin; cilia brownish with a fine pale line at base. Hind wing semihyaline yellowish white, the inner area clothed with yellow hair.

Hab. Mashonaland (*Dobbie*), 1 ♂ type. *Exp.* 46 millim.

Genus **EMBOLŒCIA**, nov.

Type, *E. sauzalitæ*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate; frons with vertical flattened corneous process with rounded edge in front; eyes large, round; antennæ of female ciliated; thorax clothed with hair and hair-like scales (much rubbed, ? tegulæ produced to a slight dorsal ridge, prothorax with long oblique flattened crest, metathorax with divided crest); tibiæ fringed with long hair; abdomen with dorsal crests on basal segments. Fore wing with the apex somewhat produced and acute; the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4363. Embolœcia sauzalitæ.

Ochria sauzalitæ, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 216 (1875); Smith, Cat. Noct. N. Am. p. 179.

♀. Head and thorax ochreous mixed with rufous and red-brown, the scales slightly tipped with grey; abdomen ochreous irrorated with red-brown. Fore wing yellow irrorated with rufous, the antemedial area, cell and postmedial area suffused with purple-brown, the veins streaked with brown; antemedial line very

Fig. 20.—*Embolœcia sauzalitæ*, ♀. ½.

indistinct, sinuous and strongly excurved above inner margin; claviform white defined by dark brown, bifid and divided by a yellow streak; orbicular white defined by dark brown and with brown point in middle, small, round; reniform yellow with two small white spots above and three below defined by rufous; a diffused rufous medial line from cell to inner margin; postmedial line double, the inner line indistinct, the outer strong, purplish fuscous, strongly bent outwards below costa, oblique and slightly incurved below vein 5; subterminal line angled outwards at veins 7, 6, 4, 3, 2; a yellow patch at apex; a fine brown terminal line; cilia red-brown mixed with greyish and with fine pale line at base. Hind wing ochreous yellow irrorated with brown, the veins brown; traces of a curved postmedial line; a diffused brown subterminal band except towards costa; a fine brown terminal line; the underside ochreous yellow irrorated with red-brown, traces of a slight discoidal lunule and sinuous postmedial line.

Hab. U.S.A., California, Sauzalita (*Behrens*), 1 ♀ type. *Exp.* 36 millim.

Genus **PAPAIPEMA.**

Type.

Papaipema, Smith, Trans. Am. Ent. Soc. xxvi. p. 12 (1899) ..... *cerina.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed, tegulæ produced to a slight dorsal ridge, the prothorax with long flattened oblique crest, the metathorax with divided crest; tibiæ fringed with long hair; abdomen with dorsal crests on basal segments. Fore wing with the apex produced and acute, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anasto-

mosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

The larvæ feed in the stems of plants, when young the ground-colour is dark with the dorsal and subdorsal lines white, when full-grown they are translucent white without markings.

A. Head, thorax and terminal area of fore wing purple-pink ..... *appassionata.*

B. Head, thorax and terminal area of fore wing not purple-pink.

a. Fore wing with the ground-colour yellow.

a^1. Fore wing with the postmedial line single, dentate . *cerina.*

b^1. Fore wing with the postmedial line double and not dentate.

a^2. Fore wing more or less tinged with rufous.

a^3. Fore wing with the postmedial line oblique from below costa to veins 5 or 4, then inwardly oblique.

a^4. Fore wing with the medial line angled outwards to lower angle of cell ..... *inquæsita.*

b^4. Fore wing with the medial line not angled outwards to lower angle of cell ..... *speciosissima.*

b^3. Fore wing with the postmedial line excurved from below costa to vein 4, then oblique or incurved.

a^4. Fore wing with the reniform a narrow white bar ..... *stenoscelis.*

b^4. Fore wing with yellowish or white lunule in centre of reniform surrounded by spots.

a^5. Fore wing with white spots before subbasal line.

a^6. Fore wing with the centre of reniform white ..... *nephrasyntheta.*

b^6. Fore wing with the centre of reniform pale yellow..... *marginidens.*

b^5. Fore wing with yellow spots before subbasal line.

a^6. Fore wing with the stigmata white.

a^7. Fore wing with the reniform large and dilated below.

a^8. Fore wing strongly suffused with purple-red ..... *baptisiæ.*

b^8. Fore wing much yellower and less suffused with red .... *furcata.*

b^7. Fore wing with the reniform narrower and hardly dilated below.

a^8. Fore wing with the spot at middle of outer edge of reniform white.

a^9. Fore wing nearly uniform rufous *circumlucens.*

b^9. Fore wing suffused with brown, the inner area to postmedial line and the apex reddish yellow ... *rutila.*

c^9. Fore wing much paler, yellow slightly tinged with rufous ..... *ochroptena.*

b^8. Fore wing with the spot at middle of outer edge of reniform yellow... *merriccata.*

b^6. Fore wing with the stigmata pale yellow.

a^7. Fore wing strongly suffused with rufous ..... *insulidens.*

b^7. Fore wing slightly tinged with rufous. *angelica.*

c^3. Fore wing with the postmedial line erect from below costa to vein 6, then oblique.
a^4. Fore wing with the reniform elongate and constricted at middle.
a^5. Fore wing with the postmedial line not excurved below vein 2.
a^6. Fore wing with white spots on the stigmata.
a^7. Fore wing yellow irrorated with rufous, the postmedial area suffused with purple.
a^8. Fore wing with the terminal area suffused with purple ..... *astuta.*
b^8. Fore wing with the terminal area rufous ..... *arctivorens.*
b^7. Fore wing nearly uniformly suffused with rufous, the postmedial area suffused with purple ..... *harrisi.*
b^6. Fore wing without white spots on the stigmata..... *impecuniosa.*
b^5. Fore wing with the postmedial line excurved below vein 2..... *verona.*
b^4. Fore wing with the reniform shorter and more rounded ..... *limata.*
d^3. Fore wing with the postmedial line bent outwards below costa, then oblique.
a^4. Fore wing with white centre to reniform ... *latia.*
b^4. Fore wing with yellow centre to reniform.
a^5. Fore wing with the postmedial line strongly bent outwards below costa.
a^6. Fore wing with rufous spot in centre of orbicular.
a^7. Fore wing with the claviform and orbicular filled in with white ..... *purpurifascia.*
b^7. Fore wing with the claviform and orbicular filled in with pale yellow... *anargyrea.*
b^6. Fore wing without rufous spot in centre of orbicular ..... *pterisii.*
b^5. Fore wing with the postmedial line slightly angled outwards below costa ..... *rigida.*
b^2. Fore wing not tinged with rufous.
a^3. Fore wing with the stigmata filled in with white ..... *duovata.*
b^3. Fore wing with the stigmata not filled in with white ..... *cataphracta.*
b. Fore wing with the ground-colour ochreous brown.
a^1. Fore wing with the ante- and postmedial lines double.
a^2. Fore wing with the ante- and postmedial areas purple-brown..... *imperspicua.*
b^2. Fore wing with the ante- and postmedial areas concolorous ..... *unimoda.*
b^1. Fore wing with the ante- and postmedial lines single..... *aveme.*
c. Fore wing with the ground-colour purple or olive-brown.
a^1. Fore wing with the postmedial line excurved from below costa to vein 4, then incurved.
a^2. Fore wing with the whole medial area bronze-brown.
a^3. Fore wing with the postmedial line erect below vein 3..... *velita.*

b^3. Fore wing with the postmedial line oblique below vein 3 ..... *frigida.*
b^2. Fore wing with the inner medial area deep red irrorated with yellow, the reniform elongate and constricted at middle ..... *cerrussata.*
c^3. Fore wing with the inner medial area red not irrorated with yellow, the reniform shorter and broader ..... *sciata.*
d^2. Fore wing with the whole medial area concolorous with rest of wing ..... *limpida.*
b^1. Fore wing with the postmedial line oblique from below costa to vein 6, then inwardly oblique.
a^2. Fore wing olive-brown ..... *nebris.*
b^2 Fore wing purple-brown.
a^3. Fore wing with the medial and terminal areas tinged with brown ..... *duplicata.*
b^3. Fore wing uniform purple-brown irrorated with white ..... *maritima.*
c^1. Fore wing with the postmedial line slightly angled outwards below costa, then oblique ..... *cupatorii.*
d^1 Fore wing with the postmedial line absent.
a^2. Hind wing tinged and irrorated with brown; size 36–48 millim ..... *necopina.*
b^2. Hind wing whitish irrorated with brown; size 32 millim ..... *imperturbata.*

4364. **Papaipema appassionata.** (Plate CXXXVIII. fig. 5.)

Gortyna appassionata, Harv. Can. Ent. viii. p. 155 (1876); Smith, Cat. Noct. N. Am. p. 178.

Head and thorax purplish pink mixed with some white; antennæ white; outer edge of patagia and thoracic crests at tips dark brown; abdomen pale yellow, the basal crest and anal tuft tinged with rufous. Fore wing pale yellow suffused in parts with bright rufous and the veins streaked with rufous to the postmedial line, the postmedial and terminal areas purplish red with fiery red patch at apex; subbasal line rufous with yellow before and beyond it, waved from costa to submedian fold, then bent inwards to base; antemedial area rufous to vein 1; antemedial line double filled in with yellow, somewhat inwardly oblique and sinuous to vein 1, then bent outwards above inner margin; claviform represented by two white spots defined by brown, divided by a rufous streak in submedian fold and with a few rufous scales on them; orbicular white defined by brown and with rufous point in centre, slightly constricted at middle; reniform very large with yellow line in centre defined by rufous, surrounded by white spots separated by rufous streaks on the veins; an oblique waved rufous medial line from cell to inner margin; postmedial line double filled in yellow, the inner line rufous, the outer dark, dilated at costa, slightly bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, some yellow points beyond it on costa; traces of a yellowish subterminal line, incurved below costa and bounding the red apical patch, then slightly waved and excurved at middle; a slight red-brown terminal line. Hind wing pale yellow tinged with rufous, except on terminal area, the veins

brownish; a slight discoidal line and oblique waved postmedial line excurved at median nervules; a slight brown terminal line; cilia tinged with crimson; the underside yellow with the costa and terminal area to vein 4 tinged with rufous; a faint oblique postmedial line.

Hab. Canada, Ontario, Ottawa (*Young*), 1 ♂, 2 ♀, London, 1 ♀ type. *Exp.* 34–38 millim.

Larva. Bird, Can. Ent. xxxv. p. 91.

Sienna-brown, dorsal and subdorsal lines pure white. Food-plant, *Sarracenia*.

4365. **Papaipema cerina.** (Plate CXXXVIII. fig. 6.)

Gortyna cerina, Grote, Proc. Ac. Nat. Sci. Phil. 1874, p. 200; id. Illustr. Essay, p. 59, pl. ii. f. 25; Smith, Cat. Noct. N. Am. p. 176.

♀. Head and thorax bright yellow, the head, tegulæ at base, shoulders, a band behind tegulæ, tips of patagia and metathoracic crests at sides suffused with purplish rufous; legs with rufous mixed; abdomen ochreous yellow. Fore wing bright yellow; subbasal line rufous, double, waved, from costa to submedian fold, the antemedial area purplish rufous except at costa; antemedial line rufous, double, waved, oblique; claviform short and broad, purplish rufous defined by rufous; orbicular and reniform purplish rufous defined by rufous, the former very small, elliptical, the latter strongly constricted at middle; a rufous medial line incurved and dentate below the cell; postmedial line rufous, bent outwards below costa, then dentate, incurved below vein 4 to lower extremity of reniform; postmedial and terminal areas except at apex purplish rufous, the subterminal line yellow, excurved below vein 7 and slightly at middle; a terminal series of slight brown striæ; cilia purplish rufous slightly mixed with yellow. Hind wing pale ochreous yellow slightly tinged with rufous except on costal area; an indistinct diffused subterminal brownish band; the underside with the costal area tinged with rufous, a slight discoidal lunule, oblique postmedial line, and traces of subterminal band.

Hab. U.S.A., Maine, Kansas, 1 ♀ type. *Exp.* 50 millim.

4366. **Papaipema inquæsita.** (Plate CXXXVIII. fig. 7.)

Gortyna inquæsita, Grote, Trans. Am. Ent. Soc. i. p. 344 (1868); Smith, Cat. Noct. N. Am. p. 176.

Head and thorax bright rufous mixed with yellow; abdomen yellow faintly tinged with rufous, the crests brownish. Fore wing yellow suffused with bright rufous, the veins and submedian fold streaked with brown; subbasal line faint, double, rufous, waved, from costa to submedian fold; antemedial line indistinctly double, rufous, waved; claviform defined by rufous, elliptical and bisected by the streak in submedian fold; orbicular small, elliptical, yellow defined by rufous; reniform narrow and faintly defined by rufous, oblique; medial line rufous, somewhat diffused, very oblique from

costa to lower angle of cell, then inwardly oblique; postmedial line double, rufous, bent outwards below costa, obliquely excurved to vein 4, then very oblique, some whitish points beyond it on costa; faint traces of a rufous subterminal line excurved below vein 7 and at middle; a red-brown terminal line. Hind wing pale yellow tinged with rufous, the veins brownish; a fine brown terminal line; the underside yellowish white faintly tinged with rufous, a slight rufous postmedial line excurved to vein 4, then oblique.

Hab. U.S.A., Eastern, Middle, and Central States, New Hamp shire, New York, 1 ♂, 1 ♀, Rye (*Bird*), 1 ♀, Rhode I. *Exp.* ♂ 38, ♀ 42 millim.

Larva. Head shining pale brown with a blackish shade over the ocelli. Body sordid whitish without markings; cervical shield and anal plate pale brown with black edges; tubercles small, black, those around the spiracles larger. Food-plant, *Onoclea sensibilis*, Linn.—H. G. D.

*4367. Papaipema speciosissima. (Plate CXXXVIII. fig. 8.)

Gortyna speciosissima, Grote & Rob. Trans. Am. Ent. Soc. i. p. 342, pl. vii. f. 52 (1868); Smith, Cat. Noct. N. Am. p. 177.

♂. Head and thorax bright rufous; abdomen ochreous tinged with rufous, the ventral surface rufous. Fore wing yellow, almost wholly suffused with bright rufous, the veins streaked with rufous; subbasal line represented by two red striæ from costa; antemedial line double, the outer line less distinct, angled outwards below costa, then sinuous, excurved above inner margin; claviform two small white spots defined by brown; orbicular a small white bar defined by brown; reniform a very narrow and elongate oblique white lunule defined by brown; medial line red, oblique from costa to median nervure, then inwardly oblique; postmedial line double, the inner line fine, slightly bent outwards below costa, oblique and minutely waved to vein 5, then inwardly oblique; the terminal area rather redder; subterminal line indistinct, faintly defined by yellowish on outer side, somewhat dentate, angled outwards at vein 7 and excurved at middle; a fine rufous terminal line; cilia bright rufous. Hind wing yellowish suffused with rufous; traces of a sinuous postmedial line; a fine rufous terminal line; the underside with distinct curved postmedial line.

Hab. U.S.A., Massachusetts, New York, Rhode I., New Jersey in Coll. E. Shoemaker. *Exp.* 52 millim.

*4368. Papaipema stenoscelis. (Plate CXXXVIII. fig. 9.)

Hydræcia stenoscelis, Dyar, J. N.Y. Ent. Soc. xv. p. 52 (1907).

♀. Head and thorax ochreous tinged with rufous and mixed with purplish; abdomen ochreous white tinged with purplish. Fore wing ochreous tinged with rufous and suffused with purplish except on inner half of medial area and before postmedial line; antemedial line indistinct, double, nearly straight; stigmata pure

white, the claviform and orbicular forming narrow bars separated by the median nervure, the reniform an oblique bar; medial line distinct, brown, oblique, slightly excurved at median nervure; postmedial line double, the inner line indistinct, slightly bent outwards below costa, excurved to vein 4, then oblique; subterminal line represented by a series of faint dark lunules; the veins of terminal area with dark streaks; an apical yellow patch. Hind wing ochreous tinged with fuscous; cilia ochreous.

Hab. U.S.A., Maryland, Baltimore. *Exp.* 40 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*4369. **Papaipema nephrasyntheta.** (Plate CXXXVIII. fig. 10.)

Gortyna nephrasyntheta, Dyar, Can. Ent. xl. p. 78 (1908).

♀. Head and thorax purple-brown; abdomen whitish suffused with purple-brown. Fore wing purplish red, the inner half to postmedial line and the apical patch yellowish red; a white point at base; subbasal white spots below costa and cell followed by the sinuous red-brown subbasal line defined by white marks on outer side and with white point beyond it in cell; antemedial line indistinct, oblique, sinuous, bent outwards above inner margin; claviform represented by two superimposed round white spots; orbicular a small round white spot; reniform with white centre surrounded by white spots except at middle of inner side; medial line brown, oblique to median nervure, then minutely waved; postmedial line double, strongly bent outwards below costa, then minutely waved, excurved to vein 4, then slightly incurved, some white points beyond it on costa; subterminal line reddish defined on inner side by brown, minutely dentate, angled outwards at vein 7 and slightly excurved at middle; a fine red-brown terminal line. Hind wing whitish suffused with red; a slight discoidal lunule, faint sinuous postmedial line, and diffused subterminal band.

Hab. U.S.A., Maryland, Plummer's I. *Exp.* 54 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

4370. **Papaipema marginidens.** (Plate CXXXVIII. fig. 11.)

Gortyna marginidens, Guen. Noct. i. p. 123 (1852); Smith, Cat. Noct. N. Am. p. 177.
Gortyna Birdi, Dyar, Can. Ent. xl. p. 78 (1908).

Head and thorax purple-red, the vertex of head whitish; antennæ with the basal joint white; tegulæ tipped with white; tarsi ringed with white; abdomen whitish suffused with purplish rufous. Fore wing rufous, the inner area yellower, the antemedial and postmedial areas to vein 1 greyish purple; subbasal line waved, from costa to vein 1, with white patches before it below costa and cell, defined by white on outer side and with white point beyond it in cell; antemedial line indistinctly double, angled inwards on sub-

costal nervure, incurved in submedian interspace and strongly excurved above inner margin, an oblique white striga on it below the cell; claviform represented by two white spots defined by rufous, the lower round, the upper small and oblique; orbicular white defined by rufous and with rufous point on it near outer edge, rather triangular; reniform large, oblique, constricted at middle and expanding below, with yellow line in centre defined by rufous surrounded with white spots defined by rufous; medial line red-brown, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line double, bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, some whitish points beyond it on costa; subterminal line brown, dentate, excurved below vein 7 and at middle; an apical yellow patch; a fine brown terminal line. Hind wing ochreous white tinged with purplish red; traces of a discoidal lunule, sinuous postmedial line and diffused subterminal band; a fine brown terminal line; the underside whitish tinged with purplish red, an indistinct curved postmedial line.

Hab. U.S.A., Northern, Eastern, and Middle States, 1 ♂, New York, Rye (*Bird*), 1 ♂, 1 ♀, Illinois. *Exp.* 46–50 millim.

Larva. Head reddish brown, the mouth blackish. Body sordid whitish, translucent; cervical shield and anal plate brown; tubercles large, brown, the two on joint 1 the same size as the four dorsal ones on joint 12. Food-plant, *Cicuta maculata*.—H. G. D.

4371. Papaipema baptisiæ. (Plate CXXXVIII. fig. 12.)

Hydrœcia baptisiæ, Bird, Can. Ent. xxxiv. p. 109 (1902); Dyar, Cat. Lep. N. Am. p. 176.

♂. Head and thorax deep purple, the scales slightly tipped with grey, the tips of tegulæ and a patch behind prothoracic crest and on upper edge of patagia orange; abdomen ochreous slightly suffused with purple, more strongly on ventral surface. Fore wing orange-yellow, the antemedial, postmedial, and the terminal area except at apex deep purple-red, the medial area mostly suffused and irrorated with chocolate-red, the apical area irrorated with chocolate-red; subbasal line deep red with yellow before and beyond it, waved, from costa to submedian fold; antemedial line indistinct, double filled in with some yellow, waved, rather oblique; claviform represented by two obliquely placed pure white spots, the lower larger; orbicular pure white defined by brown, round; reniform with yellow line in centre defined by red surrounded by pure white spots separated by red streaks, its inner edge excised; an indistinct sinuous red line from lower angle of cell to inner margin; postmedial line double filled in with yellow towards costa and inner margin, the inner line indistinct, the outer dark except towards costa, bent outwards below costa, then very slightly waved, oblique to vein 6 and incurved below vein 4, some pale points beyond it on costa; subterminal line dark brown with a few yellow scales on its

outer edge, angled outwards at vein 7, excurved and waved at middle, incurved at discal and submedian folds; a fine brown terminal line; cilia purplish at base, dark brown at tips. Hind wing pale yellow, the veins and terminal area tinged with purplish; an indistinct sinuous postmedial line and traces of a diffused subterminal band; the underside with the costal area irrorated with purplish red, a discoidal point, curved postmedial line and indistinct diffused subterminal band.

Hab. U.S.A., New York, Rye (*H. Bird*), 1 ♂ cotype. *Exp.* 38 millim.

Larva. Semitranslucent; 1st four abdominal segments dark, the outer segments with pale dorsal, subdorsal, and lateral lines, the dorsal line showing slightly on the dark somites; head yellow with dark lateral line. Food-plant, *Baptisia tinctorina.*

*4372. Papaipema furcata. (Plate CXXXVIII. fig. 13.)

Hydræcia furcata, Smith, Trans. Am. Ent. Soc. xxvi. p. 46 (1899); Dyar, Cat. Lep. N. Am. p. 177.

♂. Head and thorax pale yellow mixed with rufous; antennæ with the basal joint white; pectus and legs whitish tinged with rufous; abdomen ochreous white. Fore wing pale yellow more or less suffused with rufous, the veins slightly streaked with red-brown; traces of a waved red-brown subbasal line from costa to submedian fold; antemedial line very indistinct, waved, red-brown, with pure white spots before it in cell and above vein 1; claviform represented by two round pure white spots defined by red-brown, the upper rather smaller; orbicular pure white defined by red-brown, round; reniform with pale yellow lunule at centre and spot on outer edge, defined by three small white spots above and four below all defined by red-brown; an oblique diffused rufous shade from lower angle of cell to inner margin; postmedial line double, red-brown, bent outwards below costa, then crenulate, excurved to vein 4, then oblique; subterminal line red-brown, dentate, excurved below vein 7 and at middle, a yellow patch beyond it at apex; a fine red-brown terminal line. Hind wing very pale yellow; the underside whiter, the costa and veins slightly tinged with rufous, traces of a curved postmedial line.

Hab. U.S.A., New Hampshire, Manchester, New York, Long I., New Jersey, Carlstadt, Washington, D.C. (*Hay*), in U.S. Nat. Mus., Illinois, Urbana. *Exp.* 44 millim.

4373. Papaipema circumlucens. (Plate CXXXVIII. fig. 14.)

Hydræcia circumlucens, Smith, Trans. Am. Ent. Soc. xxvi. p. 43 (1899); Dyar, Cat. Lep. N. Am. p. 176.

♂. Head and thorax purplish rufous mixed with some greyish, the mesothorax with some orange fulvous; antennæ with the 1st joint white; pectus and legs rufous, the tarsi slightly ringed with white; abdomen rufous tinged with purplish brown, the crests

brown. Fore wing fulvous, the basal, costal, and terminal areas tinged with brown; a white point at base of inner margin; subbasal line double, brown, filled in with whitish at costa and with whitish point beyond it in cell, waved, from costa to submedian fold; antemedial line double, indistinct except towards costa and inner margin and filled in with white at costa, inwardly oblique and sinuous from costa to above vein 1, then strongly bent outwards: claviform represented by two round white spots defined by blackish, the upper smaller; orbicular small, white defined by blackish, rather constricted at middle; reniform with yellow line in centre defined by brown surrounded with small white spots defined by rufous except at middle of inner side, oblique; an oblique line from lower angle of cell to inner margin to which it is slightly bent outwards; postmedial line double, the inner line indistinct except below vein 3, bent outwards below costa, then very minutely waved, excurved to vein 4, then oblique, some small white spots beyond it on costa; subterminal line brown slightly defined by fulvous on outer side and with fulvous patch beyond it at apex, excurved at vein 7 and middle, a fine brown terminal line; cilia red-brown with a slight dark line through them. Hind wing yellow tinged with rufous, the veins and terminal area suffused with purplish red; cilia with a slight pale line at base: the underside yellowish white, the costal and terminal areas tinged with purplish red, an indistinct curved postmedial line.

Hab. U.S.A., Massachusetts, New York, 1 ♂, 2 ♀, Rye (*Bird*), 1 ♂, 1 ♀. *Exp.* 48 millim.

Larva. Bird, Can. Ent. xxxix. p. 137.

Head pale brown with a black mark on the ocelli. Body cylindrical, translucent, faintly purplish, the dorsal line paler; cervical shield and anal plate large, brown; tubercles small, brown, a large brown area around iv. Food-plant: Hop (*Humulus*), forming a gall in stem of vine.—H. G. D.

4374. **Papaipema rutila.** (Plate CXXXVIII. fig. 15.)

Gortyna rutila, Guen. Noct. i. p. 123, pl. vi. f. 1 (1852); Smith, Cat. Noct. N. Am. p. 177.
Gortyna nepheleptena, Dyar, Can. Ent. xl. p. 77 (1908).

Head and thorax red-brown mixed with greyish; abdomen greyish tinged with brown. Fore wing suffused with brown, the inner area reddish ochreous to postmedial line; indistinct yellowish spots at base below costa and cell, crossed by the slight subbasal line; antemedial line obsolete; claviform represented by two small white spots, the upper excised on inner side; orbicular a small round white spot; reniform a narrow yellow lunule surrounded by white spots; a slight incurved medial line from lower angle of cell to inner margin; postmedial line indistinct, bent outwards below costa, excurved to vein 4, then oblique; subterminal line yellowish defined by brown on inner side, diffused on outer, minutely waved,

angled outwards at vein 7 and at middle; an apical yellow patch. Hind wing whitish tinged with brown leaving an ill-defined terminal whitish band.

Hab. U.S.A., New York, Illinois (*Doubleday*), 1 ♂ type. *Exp.* 36 millim.

*4375. Papaipema ochroptena. (Plate CXXXVIII. fig. 16.)

Gortyna ochroptena, Dyar, Can. Ent. xl. p. 77 (1908).

Head, thorax, and abdomen pale ochreous yellow slightly tinged with rufous. Fore wing pale yellow slightly tinged with rufous, the lines indistinct; subbasal line curved, from costa to submedian fold; antemedial line sinuous, bent outwards above inner margin; claviform represented by two obliquely superposed white spots; orbicular a small white spot; reniform with white lunule in centre surrounded by white spots; an oblique line from lower angle of cell to inner margin; postmedial line indistinctly double, bent outwards below costa, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line yellow defined by brown on inner side, excurved below vein 7 and at middle; an apical yellow patch; a fine brown terminal line. Hind wing white faintly tinged with rufous.

Hab. U.S.A., Colorado, Denver. *Exp.* 34 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

4376. Papaipema merriccata. (Plate CXXXVIII. fig. 17.)

Papaipema merriccata, Bird, Can. Ent. xxxix. p. 270 (1907).

Head and thorax rufous mixed with some brown; basal joint of antennæ pure white, the pro- and metathoracic crests dark brown; abdomen ochreous yellow with the crests brown. Fore wing yellow thickly suffused and irrorated with bright rufous, the terminal area deeper rufous; subbasal line double, rufous filled in with yellow and with some yellow before it, waved, from costa to submedian fold, a white point beyond it in cell; antemedial line indistinct, double filled in with yellowish; angled inwards below costa and on vein 1, angled outwards at median nervure and strongly bent outwards above inner margin; claviform a round white spot with white point above it, both defined by black; orbicular a rather elliptical white spot defined by black; reniform a narrow yellow lunule defined by rufous with two white spots on its inner side and three on outer all defined by black, and a yellow lunule defined by rufous at middle of outer edge; an indistinct brown medial line, oblique from costa to lower angle of cell, then sinuous; postmedial line double, the inner line indistinct except at inner margin, the outer dark brown; a yellow spot on it at costa, bent outwards below costa, then very slightly waved, excurved to vein 4, then

oblique and slightly incurved below vein 2, some whitish points beyond it on costa; subterminal line represented by very faint yellowish lunules very slightly defined by brown on inner side, angled outwards at vein 7 and excurved at middle; an apical yellow patch; cilia dark brown. Hind wing pale yellow, the veins tinged with red-brown, a faint diffused red-brown subterminal band; a fine brown terminal line; cilia with a slight brown line near base and brownish tips; the underside with the costal area irrorated with rufous, slight curved postmedial and subterminal lines.

Hab. U.S.A (*Doubleday, Grote*), 2 ♂, Pennsylvania, New Brighton (*Merrick*), 1 ♀ cotype. *Exp.* ♂ 42, ♀ 48 millim.

Larva. Pink; dorsal, subbasal and lateral lines pale yellowish, the last two interrupted on 1st four abdominal somites; tubercles brownish; spiracles black Food-plant, *Podophyllum peltatum.*

*4377. Papaipema insulidens. (Plate CXXXVIII. fig. 18.)

Hydræcia insulidens, Bird, Can. Ent. xxxiv. p. 112, pl. 3 (1902); Dyar, Cat. Lep. N. Am. p. 176.

Yellow suffused with bright rufous. Fore wing slightly irrorated with dark scales especially on the veins; a yellowish or whitish point at base; subbasal line waved, from costa to submedian fold, the area before it sometimes whitish; antemedial line indistinct, waved; medial area yellow with purplish shading towards costa; stigmata yellowish white; claviform double, orbicular round, reniform with central lunule surrounded by small spots; medial line nearly erect from costa to vein 2, then oblique; postmedial line double, oblique from costa to vein 6, excurved to vein 4, then oblique, the area beyond it purplish to the dentate subterminal line which is angled outwards at vein 7 and excurved at middle; an apical yellowish patch or the whole terminal area yellowish. Fore wing yellowish suffused with fuscous especially towards termen; cilia purplish; the underside tinged with pinkish.

Hab. Canada, Vancouver I. *Exp.* 32–37 millim. This species is unknown to me; figured from drawing from type in Coll. Bird.

*4378. Papaipema angelica. (Plate CXXXVIII. fig. 19.)

Hydræcia angelica, Smith, Trans. Am. Ent. Soc. xxvi. p. 40 (1899); Dyar, Cat. Lep. N. Am. p. 176.

♂. Head and thorax pale orange-yellow, the pro- and meta-thoracic crests and patagia tipped with dark brown; abdomen pale yellow. Fore wing pale yellow slightly irrorated with red-brown, rather more thickly on postmedial area; antemedial line indistinct, double, angled outwards below costa, incurved in submedian interspace and excurved above inner margin; claviform faintly

defined by red-brown, extending to median nervure; orbicular and reniform defined by red-brown, the former indistinct, round, with brown point in centre, the latter with some brown suffusion on inner part; medial line indistinct, oblique from costa to reniform, inwardly oblique below the cell and bent outwards to inner margin; postmedial line double, the inner line indistinct, bent outwards below costa, excurved to vein 5, then oblique; subterminal line waved, angled outwards at vein 7 and inwards at discal fold to postmedial line, excurved at middle; the veins of terminal area slightly tinged with brown; a fine red-brown terminal line; cilia brown mixed with greyish. Hind wing pale yellow with indistinct diffused brownish subterminal line and slight terminal line; the underside yellowish white, the costal area slightly irrorated with red-brown, an indistinct curved postmedial line.

Hab. U.S.A., California, Los Angeles (*Coquillet*), in U.S. Nat. Mus. *Exp.* 44 millim.

*4379. Papaipema astuta. (Plate CXXXVIII. fig. 20.)

Papaipema astuta, Bird, Can. Ent. xxxix. p. 272 (1907).

♀. Head and thorax yellow mixed with brown, the prothoracic crest dark brown and grey at tip, the thorax edged with black-brown at sides and behind; abdomen pale yellowish tinged with brown. Fore wing yellow irrorated with red, the postmedial and terminal areas purple-brown, the former deeper in colour, leaving a yellowish apical patch; subbasal line double, red, sinuous, from costa to submedian fold, with a minute yellow point beyond it in cell; antemedial area with a purplish-brown band; the antemedial line indistinct, double, red, sinuous; claviform represented by two superposed white spots defined by rufous; orbicular a small round white spot defined by rufous; reniform a narrow yellow lunule surrounded by small spots, those at lower extremity whitish and all defined by rufous; medial line rufous, oblique and sinuous from costa to median nervure, then inwardly oblique; postmedial line double, the inner line rufous, the outer blackish, strongly bent outwards below costa, erect to vein 6, then obliquely incurved; subterminal line indistinct, brown, angled outwards at vein 7 and excurved at middle; a fine dark terminal line; cilia purplish fuscous. Hind wing ochreous white tinged with brown, the veins slightly streaked with brown; a fine brown terminal line; the underside with slight discoidal lunule and indistinct postmedial line.

Hab. U.S.A., New York, Rye, type † ♀ in Coll. Bird. *Exp.* 36 millim.

Larva. Yellowish, lines very faint, obsolete on the 1st four abdominal somites which are dark; tubercles small, black; thoracic shield black at sides. Food-plant, *Collinsonia canadensis*.

4380. **Papaipema arctivorens**, n. sp. (Plate CXXXVIII. fig. 21.)

Head and thorax purple mixed with yellow; antennæ with the basal joint white; tegulæ slightly edged with yellow behind; abdomen yellow tinged with rufous, the crests dark. Fore wing yellow irrorated with bright rufous, the postmedial area purplish, the terminal area suffused with red-brown except at apex, the veins slightly streaked with brown, subbasal line rufous defined on outer side by slight yellow marks and with yellow point beyond it in cell, sinuous, from costa to submedian fold; antemedial line indistinct, inwardly oblique and sinuous to vein 1, then bent outwards above inner margin; claviform represented by two obliquely placed white spots defined by brown, the upper small; orbicular small, elliptical, white defined by brown; reniform with sinuous oblique yellow line in centre defined by rufous, with curved white mark on inner edge above, white point below and two white points beyond lower extremity; a slight sinuous rufous medial line, oblique to median nervure, then inwardly oblique; postmedial line double, the inner line indistinct and rufous except at costa where it is filled in with yellow, strongly bent outwards below costa, then minutely waved, erect to vein 6, then oblique, some whitish points beyond it on costa; a yellowish minutely waved subterminal line, incurved below costa and defining the yellowish apical patch, excurved at middle; cilia greyish brown. Hind wing ochreous white tinged with rufous, the veins brownish; a faint diffused subterminal brown band; the underside yellowish white, the costal and terminal areas suffused and irrorated with rufous; a slight discoidal line and curved postmedial line.

Hab. Canada, Montreal (*Bird*), 1 ♂. *Exp.* 36–44 millim. Six males and five females in Coll. Bird examined.

Larva. Food-plants: Burdock and Thistle.

4381. **Papaipema harrisi.**

Gortyna harrisii, Grote, Bull. U.S. Geol. Geog. Surv. Terr. vi. pp. 268, 276 (1881); Smith, Cat. Noct. N. Am. p. 177.

♂. Head and thorax bright rufous mixed with red-brown;

Fig. 21.—*Papaipema harrisi*, ♂. ½.

antennæ with the basal joint pure white; fore tarsi ringed with white; abdomen yellowish irrorated with dark brown. Fore wing

yellow almost wholly suffused and irrorated with rufous, the area before postmedial line yellower and the postmedial area deeper rufous; a white point at base; subbasal line rufous defined by yellow on outer side and with some yellow before it, angled outwards below costa and ending at vein 1, a yellow point beyond it in cell; antemedial line indistinct, red-brown, excurved in cell and bent outwards above inner margin; claviform represented by two round pure white spots defined by dark brown, the upper smaller; orbicular pure white defined by dark brown, rather small, elliptical; reniform with yellow line in centre defined by rufous and surrounded by small white spots defined by brown except at middle of inner side; an oblique rufous line from lower angle of cell to inner margin; postmedial line double, the inner line rufous, the outer dark brown strongly bent outwards below costa, then very minutely sinuous, erect to vein 6, then oblique, some slight white points beyond it on costa; subterminal line represented by slight yellow marks on outer edge of the dark rufous area, dentate at veins 7, 6, 4, 3, 2; a terminal series of small red-brown lunules; cilia dark brown. Hind wing yellowish tinged with brown, the costal area whitish; a faint diffused dark subterminal band; a slight brown terminal line from apex to vein 2; cilia yellowish with slight brown line through them from apex to vein 2, then whitish; the underside yellowish white, the costal half and terminal area irrorated with rufous, a small discoidal spot, curved postmedial line, and traces of diffused subterminal band.

♀. Head, thorax, and fore wing yellow and less rufous.

Ab. 1. ♀. Fore wing more uniform rufous, and without the white spots on the stigmata; in Coll. Bird.

Hab. U.S.A., Maine, Kittery Point, 1 ♂, 2 ♀ type, Massachusetts, New York (*Doubleday*), 1 ♂, 1 ♀. *Exp.* 40–42 millim.

Larva. Bird, Can. Ent. xxxii. p. 282.

Pale and semitranslucent; dorsal line indistinct; tubercles black. Food-plant, *Heracleum lanatum*.

4382. Papaipema impecuniosa. (Plate CXXXVIII. fig. 22.)

Gortyna impecuniosa, Grote, Bull. U.S. Geol. Geog. Surv. Terr. vi. p. 267 (1881); Smith, Cat. Noct. N. Am. p. 176.

Head and thorax purplish rufous mixed with white; abdomen pale rufous, the crests and anal tuft with white mixed. Fore wing yellow suffused in parts with purplish and irrorated with fiery red to postmedial line, the terminal area purplish rufous; subbasal line slight, red, waved, from costa to submedian fold, some purplish suffusion beyond it; antemedial line slight, red, waved, bent outwards below submedian fold; claviform yellow defined by brown, constricted at middle; orbicular and reniform yellow defined by brown, the former small, round, the latter with some red in centre, its outer part broken up by streaks, an oblique dark line from lower

angle of cell to inner margin; postmedial line double, the outer line dark, bent outwards below costa, erect to vein 6, then oblique, some pale points beyond it on costa; an apical yellow patch, the subterminal line arising from it and represented by a series of slight yellow marks defined by brown marks on inner side, somewhat excurved at middle; a terminal series of dark striæ; cilia dark brown mixed with grey. Hind wing greyish suffused with brown; a fine brown terminal line; cilia brown at base, white at tips; the underside pale, tinged with purplish and irrorated with brown, a brown discoidal spot.

Hab. Canada, Alberta, Red Deer R. (*Wolley-Dod*), 1 ♂, 1 ♀; U.S.A., Massachusetts, 1 ♂ type, New York, Rye (*Bird*), 1 ♂, 1 ♀. *Exp.* 30–40 millim.

Larva. Bird, Can. Ent. xxxii. p. 279.

Flesh-colour, thoracic somites white; tubercles black; head reddish; thoracic shield yellowish; anal plate large and dark. Food-plant, *Aster umbellatus*.

4383. Papaipema verona. (Plate CXXXVIII. fig. 23.)

Hydræcia verona, Smith, Trans. Am. Ent. Soc. xxvi. p. 32 (1899); Dyar, Cat. Lep. N. Am. p. 176.

♂. Head and thorax yellow, tinged with rufous and mixed with purple-brown and grey; palpi and sides of frons purple-brown mixed with grey; the edges of patagia and metathoracic crest dark purple-brown; pectus and legs grey mixed with purple-brown; abdomen ochreous, suffused with purple-brown. Fore wing yellow irrorated with rufous, the postmedial and terminal areas suffused with purple-brown, except at apex and tornus; subbasal line represented by a slight rufous striga from costa and a curved mark below the cell; antemedial line indistinctly double, excurved to vein 1, then strongly excurved above inner margin; claviform represented by two spots defined by dark brown, the upper spot yellow, the lower white; orbicular small, round, yellowish white defined by dark brown and with brown point in centre; reniform yellow defined by dark brown and with three whitish spots on edges of lower part, constricted at middle; medial line red-brown, excurved and slightly sinuous; postmedial line double at costa and below vein 3, the inner line red-brown, the outer rather diffused, blackish, bent outwards below costa, erect to vein 3, then oblique and slightly excurved below vein 2; subterminal line yellowish, defined on inner side by small red-brown lunules, angled outwards at vein 7, excurved and minutely dentate at middle; a fine dark-brown terminal line; cilia yellow at base, brown at tips. Hind wing ochreous white irrorated with red-brown; a slight discoidal bar, indistinct postmedial line, and diffused subterminal band; a fine dark brown terminal line; cilia yellowish white.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♂, Winnipeg; U.S.A., Pennsylvania. *Exp.* 40 millim.

Larva. Food-plant, *Eupatorium*.

*4384. Papaipema limata. (Plate CXXXVIII. fig. 24.)

Papaipema limata, Bird, Can. Ent. xl. p. 30 (1908).

♂. Head and thorax yellow suffused with pinkish; abdomen white tinged with yellow. Fore wing bright lemon-yellow, the ante- and postmedial areas tinged with pinkish; subbasal line slight; antemedial line red-brown, waved, obsolete towards inner margin; claviform white, formed by two confluent elliptical spots; orbicular and reniform small, white defined by red-brown, the former elliptical, the latter with its annulus broken up into spots, some pinkish suffusion between them; postmedial line double, the inner line very fine, slightly bent outwards below costa, erect to vein 6, then inwardly oblique, some white points beyond it on costa; subterminal line only defined by the contrast between the postmedial and terminal areas; cilia pinkish. Hind wing white tinged with yellow; cilia pinkish; the underside yellowish irrorated with pink.

Hab. U.S.A., Washington, Pullman. *Exp.* 36 millim. This species is unknown to me; figured from a drawing from type in Coll. H. Bird.

*4385. Papaipema latia.

Hydræcia latia, Streck. Lep. Rhop. & Het., Suppl. 2, p. 6 (1899); Dyar, Cat. Lep. N. Am. p. 177.

Head reddish brown; thorax rather paler; abdomen paler. Fore wing yellow suffused with rufous, the postmedial area suffused with purplish brown; antemedial line purplish, indistinct; orbicular very small, round, white; reniform white with a few rufous scales on it; medial line dark, oblique from costa to median nervure, then inwardly oblique; postmedial line dark purple, very strong, oblique and straight from costa to inner margin; subterminal line sinuous; terminal area with the veins streaked with purple. Hind wing white tinged with reddish.

Hab. U.S.A., Illinois, Chicago. *Exp.* 40 millim. This species is unknown to me.

4386. Papaipema purpurifascia. (Plate CXXXVIII. fig. 25.)

Gortyna purpurifascia, Grote & Rob. Trans. Am. Ent. Soc. i. p. 341, pl. 7. f. 51 (1868); Smith, Cat. Noct. N. Am. p. 176.

♀. Head and thorax bright rufous mixed with yellow; antennæ with the basal joint pure white; tegulæ tipped with yellowish; patagia with the outer edge and tips and the tip of metathoracic crest dark brown; pectus and legs red-brown, the tarsi with faint whitish rings; abdomen yellowish tinged with rufous, the crests brown. Fore wing yellow more or less suffused with fiery rufous, the postmedial area purplish brown except at inner margin; subbasal line rufous defined on each side by yellow, waved, from costa to vein 1, a yellow point beyond it in cell; the antemedial area with some

purplish fuscous suffusion on costal half; antemedial line indistinct, double, rufous, excurved in cell and bent outwards above inner margin; claviform represented by two white spots defined by black except on inner side, the lower elliptical, the upper small; orbicular small, round, white defined by black and with rufous spot in centre; reniform yellow tinged with rufous, defined by black and rufous, its centre by rufous, with small white spots on inner edge above and below and constricted at middle; medial line rufous, sinuous, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line double, the inner line indistinct, rufous, the outer black and rather diffused except below costa, strongly bent outwards below costa, then oblique and the inner line slightly bent inwards to inner margin, some slight pale points beyond it on costa; subterminal line approximated to postmedial line, brown slightly defined by yellowish on outer side and with yellow patch beyond it at apex, dentate, angled outwards at vein 7 and excurved at middle; a dark brown terminal line; cilia purplish brown. Hind wing pale yellow, the veins brownish; a diffused brownish subterminal line with dentate outer edge; a fine brown terminal line; the underside with the costal area tinged and irrorated with rufous, a slight brown discoidal bar, curved postmedial line, and faint diffused subterminal band.

Hab. Canada, Ottawa (*Gibson*, *Young*), 4 ♀; U.S.A., Maine, Massachusetts, New York, Rye (*Bird*), 1 ♀, Illinois, Colorado. *Exp.* 34–42 millim.

Larva. Head shining reddish brown. Body faintly purplish, translucent, cervical shield large with black sides, anal plate black; tubercles black, iv. large, a rectangular dorsal shield on joint 13. Food-plants: *Aquilegia* and *Lysimachia quadrifolia*.—H. G. D.

*4387. Papaipema anargyrea. (Plate CXXXVIII. fig. 26.)

Gortyna anargyrea, Dyar, Can. Ent. xl. p. 79 (1908).

♂. Head, thorax, and abdomen yellowish suffused with red. Fore wing yellow suffused and irrorated with red, the postmedial area purple, a yellowish subbasal patch on costal area traversed by the slight subbasal line; antemedial line indistinct, brown, sinuous; claviform pale yellow, elliptical, bisected by the streak in submedian fold; orbicular pale yellow defined by brown and with red point on its outer edge, small, round; reniform with yellow centre surrounded by small yellow spots; medial line brown, oblique from costa to median nervure, then inwardly oblique; postmedial line double, the outer line blackish and rather diffused, bent outwards below costa, then oblique; subterminal line brown defined on outer side by yellow, dentate, angled outwards at veins 7, 6, 4, 3, 2; a fine terminal brown line. Hind wing yellowish white tinged with red; a diffused brown subterminal band.

Hab. U.S.A., Colorado. *Exp.* 36 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

4388. Papaipema pterisii. (Plate CXXXVIII. fig. 27.)

Papaipema pterisii, Bird, Can. Ent. xxxix. p. 310 (1907).
Gortyna triorthia, Dyar, Can. Ent. xl. p. 79 (1908).

Head and thorax yellow mixed with bright rufous; tegulæ with slight yellow tips; abdomen pale ochreous yellow, the crests brownish. Fore wing yellow suffused with bright rufous, the outer part of medial area rather yellower, the postmedial area purplish brown except at inner margin; subbasal line double, red filled in with yellow, angled inwards in cell where there is a minute elongate yellow spot beyond it and ending at vein 1; antemedial line indistinct, double, red filled in with yellow, sinuous, bent outwards above inner margin; claviform and orbicular obliquely placed bar-shaped white spots defined by black; reniform with yellow line in middle defined by red with white bar on its inner side constricted at middle and defined by black on inner side and four yellow spots on its outer edge; a brown medial line sinuous and rather diffused from costa to median nervure, then oblique; postmedial line dark brown, strongly bent outwards below costa, then oblique and slightly incurved below vein 3, some white points beyond it on costa; the veins of terminal area streaked with brown; subterminal line only defined by the contrast between the postmedial and terminal areas, angled outwards at veins 7, 4, 3 and incurved at discal and submedian folds; a dark brown terminal line; cilia purple-brown. Hind wing pale yellow with diffused brownish subterminal band and fine brown terminal line except towards tornus; the underside with the costal area irrorated with brown.

Ab. 1. Fore wing with the upper part of claviform, orbicular, and points round reniform yellow.

Hab. Canada, Ottawa (*Young*), 1 ♂, 1 ♀; U.S.A., Massachusetts, Newtonville, 2 ♂, 1 ♀, New York (*Hagen*), 1 ♀, Rye (*Bird*), 1 ♀ cotype. *Exp.* 34–38 millim.

4389. Papaipema rigida. (Plate CXXXVIII. fig. 28.)

Gortyna rigida, Grote, Can. Ent. ix. p. 87 (1877); id. Papilio, ii. pl. i. ff. 3, 3*a*; id. Illustr. Essay, p. 58, pl. ii. f. 24; Smith, Cat. Noct. N. Am. p. 176.

♂. Head and thorax pale yellow, mixed with some purplish rufous; a purplish band behind the tegulæ; abdomen ochreous white. Fore wing pale yellow irrorated with rufous, some purplish suffusion before antemedial line on costal area and on terminal area except at apex, the veins slightly streaked with rufous; subbasal line slight, rufous, curved, from costa to submedian fold; antemedial line rufous, oblique, from costa to median nervure where it is acutely angled, then inwardly oblique and strongly bent outwards above inner margin; claviform defined by rufous, figure-of-8-shaped, not touching antemedial line; orbicular and reniform defined by rufous, the former small, rather elliptical, the latter with its outer

part broken up into spots by the streaks on veins and double discoidal line; an oblique rufous line from lower angle of cell to inner margin; postmedial line strong, red-brown, angled outwards below costa, then very oblique, straight; an indistinct waved subterminal line; a fine red-brown terminal line; cilia purplish mixed with red-brown. Hind wing ochreous white, the veins and terminal area slightly irrorated with red-brown; a fine red-brown terminal line; the underside with the costal area irrorated with red-brown, a slight discoidal point and indistinct curved postmedial line.

Hab. Canada, Manitoba, Awemo (*Fletcher*); U.S.A., Maine, Massachusetts, New York, Pennsylvania, 1 ♂ type, Illinois. *Exp.* 34 millim.

4390. **Papaipema duovata.** (Plate CXXXVIII. fig. 29.)

Hydræcia duovata, Bird, Can. Ent. xxxiv. p. 115 (1902); Dyar, Cat. Lep. N. Am. p. 176.

Head and thorax ochreous mixed with purplish brown; abdomen red-brown mixed with greyish ochreous. Fore wing yellow, thickly irrorated with dark brown and black to postmedial line, the terminal area suffused with purplish and irrorated with black; subbasal line red-brown defined on each side by yellow, waved, from costa to submedian fold, with a dark patch beyond it from below costa to vein 1; antemedial line slight, excurved from costa to submedian fold, incurved at vein 1 and bent outwards above inner margin, traversing the inner side of the claviform, which is white tinged with yellow on inner side and bisected by a dark streak in submedian fold; orbicular white defined by brown and with brown point in centre, round; reniform with ochreous line defined by brown in centre surrounded by small white spots defined by brown, the spot at middle of outer side tinged with ochreous; a diffused dark medial shade, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line double filled in with yellowish, bent outwards below costa, then minutely waved, excurved to vein 4, then oblique; a yellowish patch at apex with the dentate brown subterminal line arising from it, somewhat excurved at middle and defined by yellowish on outer side; a terminal series of slight dark lunules; cilia dark brown mixed with greyish and with slight brown line through them. Hind wing yellowish irrorated with brown; traces of a fine postmedial line and diffused subterminal band; a fine brown terminal line; the underside ochreous white irrorated with brown, a dark discoidal point, curved postmedial line, traces of subterminal band and fine terminal line.

Hab. U.S.A., New York, Rye (*H. Bird*), 2 ♂, 1 ♀ cotype *Exp.* 36–46 millim.

Larva. Bird, Can. Ent. xxxii. p. 276 (*rutila*).

Head reddish brown, the mouth blackish. Body translucent purplish with broad whitish dorsal and lateral lines; shields pale brown, not contrasting; tubercles very small, inconspicuous. Food-plant, *Solidago sempervirens*.—H. G. D.

4391. **Papaipema cataphracta.** (Plate CXXXVIII. fig. 30.)

Gortyna cataphracta, Grote, Proc. Ent. Soc. Phil. iii. p. 81, pl. ii. f. 3 (1864); Smith, Cat. Noct. N. Am. p. 176.

Head and thorax dark brown mixed with grey-white; antennæ with the basal joint whitish; tegulæ slightly edged with white behind; tarsi with slight pale rings; abdomen greyish ochreous suffused with reddish brown. Fore wing golden yellow irrorated with dark brown, the antemedial, postmedial, and the terminal area except a patch at apex dark greyish brown, the veins with dark streaks; a yellow patch at base traversed by the faint waved subbasal line from costa to submedian fold and with yellow spot beyond it in cell; antemedial line double filled in with yellow, inwardly oblique and sinuous from costa to vein 1, then bent outwards above inner margin; claviform represented by a double yellow spot defined by brown and bisected by a slight brown streak in submedian fold; orbicular large, round, yellow defined by brown and with a few brown scales in centre; reniform large, with sinuous yellow line in centre defined by brown, surrounded by yellow spots divided by streaks on the veins; a medial yellow shade from costa to median nervure, then an oblique line to inner margin; postmedial line double filled in with yellow, bent outwards below costa and oblique below vein 6, with slight yellow points beyond it on costa; a faint minutely waved brown subterminal line, incurved before the yellow apical patch, then with slight yellow marks on its outer edge; a slight dark terminal line. Hind wing greyish suffused with brown; a diffused brown subterminal band; a fine brown terminal line; the underside whitish irrorated with red-brown, a faint discoidal lunule and diffused subterminal band.

Hab. Canada (*Norman*) 1 ♀, Ottawa (*Fletcher*, *Young*), 4 ♂, Ontario, Orilla (*Bush*), 1 ♂; U.S.A., Massachusetts, New York, 1 ♂, Rye (*Bird*), 1 ♂, 1 ♀, Colorado. *Exp.* 32–40 millim.

Larva. Head reddish brown with a black stripe from ocelli to occiput. Body faintly purplish, translucent, with whitish dorsal and broader lateral stripes; cervical shield and anal plate pale brown with black borders; tubercles large, brown, two large contiguous shields on joint 13. Food-plants: Wild Parsnip, &c.—H. G. D.

*4392. **Papaipema imperspicua.** (Plate CXXXVIII. fig. 31.)

Papaipema imperspicua, Bird, Can. Ent. xl. p. 29 (1908).

Head and thorax purple-brown; abdomen grey-brown. Fore wing yellow-brown, the ante- and postmedial areas purple-brown; subbasal line slight; antemedial line double, sinuous, strongly excurved above inner margin; claviform and orbicular absent; reniform ill-defined, purple-brown; medial line oblique from costa to lower angle of cell, then slightly incurved; postmedial line double, the inner line minutely lunulate, slightly bent outwards below costa, oblique to vein 5, then incurved, some white points beyond

it on costa; subterminal line slight, yellowish, minutely waved; a yellowish apical streak. Hind wing uniform fuscous brown.

Hab. U.S.A., New Hampshire, Franconia, New York, Buffalo. *Exp.* 40 millim. This species is unknown to me; figured from a drawing from type in Coll. H. Bird.

*4393. Papaipema unimoda. (Plate CXXXVIII. fig. 32.)

Hydræcia unimoda, Smith, Trans. Am. Ent. Soc. xxi. p. 73 (1894); Dyar, Cat. Lep. N. Am. p. 176.

♂. Head and thorax ochreous-brown tinged with rufous, the outer edge of patagia and metathorax with dark brown; abdomen ochreous suffused with brown, the ventral surface red-brown. Fore wing ochreous-brown tinged with rufous and thickly irrorated with brown except on inner area to postmedial line; traces of a waved brown subbasal line from costa to submedian fold; antemedial line indistinct, double, waved, oblique; orbicular and reniform brownish, very ill-defined; a diffused curved brown medial shade; postmedial line rather indistinct, double, bent outwards below costa, excurved to vein 4, then oblique; subterminal line represented by a series of small brownish lunules, slightly excurved below vein 7 and at middle; a faint oblique pale mark from apex; a fine brown terminal line; cilia dark brown with fine pale line at base. Hind wing ochreous uniformly suffused and irrorated with brown; cilia pale at base, brownish at tips; the underside ochreous white irrorated with brown, a small dark discoidal spot and diffused curved postmedial line.

Hab. U.S.A., Colorado, Durango in Coll. J. B. Smith. *Exp.* 36 millim.

4394. Papaipema aveme. (Plate CXXXIX. fig. 1.)

Gortyna aweme, Lyman, Can. Ent. xl. p. 254 (1908).

♂. Head and thorax rufous mixed with pinkish grey, the edges of patagia and the metathorax behind greyish fuscous; palpi blackish above; pectus and fore legs in front greyish brown; abdomen ochreous tinged with rufous. Fore wing ochreous-brown suffused with rufous and greyish; the antemedial area except towards inner margin and the terminal area except at apex suffused with blackish brown; subbasal line slight, waved, from costa to vein 1; antemedial line slight, waved, nearly erect; claviform absent or with slight dark spot at extremity; orbicular a small brown spot or moderately developed; reniform brown defined by blackish, strongly constricted at middle; a diffused black-brown medial line, oblique from costa to median nervure, then slightly incurved; postmedial line black-brown, oblique from costa to vein 6, then slightly incurved and with short dark streaks beyond it on the veins; subterminal line almost obsolete towards costa, then formed

of minute dark lunules, excurved at middle, the dark area beyond it cut off obliquely at apex. Hind wing pale ochreous slightly tinged with rufous; a fine rufous terminal line; the underside pale yellow slightly tinged with rufous.

Hab. Canada, Manitoba, Aweme (*Fletcher*), 1 ♂. *Exp.* 36 millim. Type † in Coll. Fletcher.

4395. **Papaipema nelita.** (Plate CXXXIX. fig. 2.)

Hydræcia nelita, Streck. Lep. Rhop. & Het., Suppl. i. p. 8 (1898); Dyar, Cat. Lep. N. Am. p. 176.

♀. Head and thorax brown mixed with purplish grey; tegulæ slightly edged with white; tarsi ringed with white; abdomen grey suffused with brown, the crests brown. Fore wing deep purple-brown irrorated with a few violaceous-white scales, the medial area golden-brown; subbasal line represented by a slight brown striga from costa; antemedial line indistinct, oblique, waved; claviform represented by a dark patch; orbicular and reniform dark, very indistinctly defined; an oblique brown line from lower angle of cell to inner margin; postmedial line fine, brown, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved and erect below vein 2, some white points beyond it on costa; traces of a waved brown subterminal line excurved below vein 7 and at middle; a fine dark terminal line; cilia dark brown. Hind wing purplish grey uniformly suffused and irrorated with brown; cilia brown, greyish at tips; the underside grey-white irrorated with brown especially on costal area; a slight discoidal lunule and faint diffused postmedial line.

Ab. 1. Fore wing with the orbicular a yellowish point, the reniform a yellowish line surrounded by yellowish-white spots.

Hab. U.S.A., New York, Rye (*Bird*), 1 ♀, Illinois, Chicago in Coll. J. B. Smith. *Exp.* 34 millim.

Larva. Bird, Can. Ent. xxxix. p. 313.

Semitranslucent whitish; lines absent; tubercles and spiracles blackish. Food-plants: *Rudbeckia laciniata* and *Arctium lappa*.

4396. **Papaipema frigida.** (Plate CXXXIX. fig. 3.)

Hydræcia frigida, Smith, Trans. Am. Ent. Soc. xxvi. p. 39 (1899); Dyar Cat. Lep. N. Am. p. 176.
Gortyna thalictri, Lyman, Can. Ent. xxxvii. p. 307 (1905).
Gortyna perobsoleta, Lyman, Can. Ent. xxxvii. p. 309 (1905).

(*thalictri.*) Head and thorax deep bronze-brown mixed with grey-white, the tegulæ tipped with grey-white; tarsi ringed with white; abdomen greyish suffused with brown. Fore wing with the area before the subbasal line, the medial and terminal areas deep golden-bronze, the antemedial, postmedial and terminal areas greyish purple; subbasal line represented by a waved series of white points

from costa to vein 1, with small white spot beyond it in cell; antemedial line indistinct, double, angled outwards below costa, incurved in cell, oblique to vein 1 and bent outwards above inner margin, some white scales on it in submedian interspace; claviform represented by two obliquely placed round white spots; the orbicular a larger rounded white spot with yellow point on outer edge; the reniform with curved yellowish-white line in middle surrounded by small white spots; medial line indistinct, dark, oblique from costa to median nervure, then erect and slightly waved; postmedial line double with whitish spot at costa, bent outwards below costa, then minutely waved, oblique below vein 4, some white points beyond it on costa; subterminal line formed by a series of slight dark lunules with some white scales on them from costa to vein 7, angled outwards at veins 7, 4, 3, then oblique; a faint yellowish apical spot; a fine dark terminal line. Hind wing greyish suffused with cupreous brown; cilia with a fine brown line through them and whitish tips; the underside grey irrorated with brown, thickly on costal area, a dark discoidal spot and indistinct curved postmedial line.

Ab. 1. *frigida*. Fore wing without the white spots on the stigmata.

Ab. 2. Fore wing with the terminal area not tinged with golden brown, the reniform less elongate.—New York.

Hab. Canada, Montreal (*Lyman*), 1 ♂, Ottawa (*Young*), 1 ♂, 1 ♀, Manitoba, Winnipeg; U.S.A., New Hampshire, White Mts., New York, Rye (*Bird*), 1 ♂, 2 ♀. *Exp.* 34–44 millim. Types† *thalictri* and *perobsoleta* in Coll. Lyman.

Larva. Semitranslucent whitish, with pale reddish-brown segmental bands in early stages, disappearing in the later stages; tubercles small, black; head and thoracic plate pale red-brown. Food-plant, *Thalictrum*.

4397. **Papaipema cerussata.** (Plate CXXXIX. fig. 4.)

Gortyna cerussata, Grote, Proc. Ent. Soc. Phil. ii. p. 431, pl. ix. f. 1 (1864); Smith, Cat. Noct. N. Am. p. 178.

Head and thorax very dark red-brown mixed with some greyish ochreous; antennæ with the basal joint white; tegulæ edged with white behind; abdomen dark reddish brown mixed with greyish ochreous, the crests dark at tips. Fore wing very dark purple-brown, the medial area red irrorated with yellow towards inner margin, the postmedial and terminal areas with a greyish gloss; a small white spot at base; subbasal white spots in and below cell, followed by two small spots in cell, then a single spot; antemedial line indistinct, sinuous, bent outwards above inner margin, defined slightly by rufous on inner side from cell to inner margin; claviform represented by two obliquely placed white spots, the upper smaller; orbicular white, rather triangular; reniform narrow, oblique, with pale yellow line in centre defined by brown surrounded

by small white spots except at middle of inner side; an indistinct oblique dark line from lower angle of cell to inner margin; postmedial line indistinct, double, dark with whitish point at costa and filled in with rufous towards inner margin, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved to lower edge of reniform, some whitish points beyond it on costa; subterminal line indistinct, rufous defined on inner side by dark brown and with more prominent rufous point below costa, slightly waved, excurved below vein 7 and at middle and bent outwards to tornus; a fine blackish terminal line; cilia with a faint dark line near base. Hind wing greyish suffused with brown with a cupreous gloss; a slight dark terminal line; cilia with a fine greyish line at base; the underside whitish suffused and irrorated with brown, especially on costal and terminal areas, a slight dark discoidal bar and diffused curved postmedial line.

Hab. U.S.A., Massachusetts, New York, Rye (*Bird*), 1 ♂, 3 ♀.
Exp. 46–54 millim.

Larva. Head reddish brown. Body purplish, translucent; cervical shield brown with blackish sides; anal plate dark brown, rough; tubercles small dorsally, larger about the spiracles, the four dorsal ones on joint 12 large, nearly touching; a large roughened shield on joint 13. Food-plant, *Vernonia noveboracencis*.—H. G. D.

4398. **Papaipema sciata.** (Plate CXXXIX. fig. 5.)

Hydræcia limpida, Bird, Can. Ent. xxxiii. p. 64 (1901), nec Guen.
Papaipema sciata, Bird, Can. Ent. xl. p. 28 (1908).

Head and thorax purplish grey slightly mixed with brown; antennæ whitish; tegulæ tipped with white; abdomen pale grey slightly mixed with brown, the crests darker. Fore wing purple-grey, the inner medial area red; a white point at base; subbasal line indistinct, bronze-brown, from costa to submedian fold; antemedial line indistinct, double filled in with bronze-brown, sinuous, strongly bent outwards above inner margin; claviform represented by two obliquely placed rounded yellowish white spots, the upper with some bronze scales in centre; orbicular yellowish-white with some brown scales in centre, rounded; reniform a narrow yellowish-white lunule defined by brown scales, with white bar on its inner side, constricted at middle and with five white spots on its outer side and below; an indistinct oblique dark line from lower angle of cell to inner margin; postmedial line indistinct, double, with whitish spot at costa, bent outwards below costa, then minutely waved, excurved to vein 4, then incurved; the veins of terminal area with dark streaks; subterminal line slight, yellowish defined on inner side by fuscous, minutely dentate, angled outwards at vein 7 and excurved at middle; a dark terminal line. Hind wing grey with fine dark terminal line; the underside whitish suffused and irrorated with grey, a rather diffused curved dark postmedial line.

Hab. U.S.A., New York, 1 ♀, Rye (*Bird*), 1 ♂, 1 ♀ cotype. *Exp.* 40–42 millim.

Larva. Pale purplish red: dorsal, subdorsal, and lateral lines indistinct, pale ochreous; tubercles and thoracic plates indistinct, brownish. Food-plant, *Veronica virginica*.

4399. Papaipema limpida. (Plate CXXXIX. fig. 6.)

Gortyna limpida, Guen. Noct. i. p. 124 (1852); Smith, Cat. Noct. N. Am. p. 178.
Gortyna ærata, Lyman, Can. Ent. xxxiii. p. 319 (1901).

Head and thorax dark reddish brown mixed with grey; antennæ with the basal joint and base of shaft white; tarsi ringed with white; abdomen greyish suffused with reddish brown. Fore wing dark reddish brown irrorated with grey; traces of an antemedial line bent outwards above inner margin; claviform represented by two rounded white spots defined by black-brown and divided by a brown streak in submedian fold; orbicular small, round, white defined by black-brown; reniform narrow with yellowish-white line in centre defined by brown scales with white spot above it, three white spots below it and a yellowish-white spot on outer edge; an indistinct rather diffused oblique dark line from lower angle of cell to inner margin; postmedial line indistinct, double, dark with whitish mark at costa, bent outwards below costa, then minutely waved, excurved to vein 4, then oblique, some slight white points beyond it on costa; faint traces of a dark subterminal line excurved below vein 7 and at middle; a slight dark terminal line; cilia with slight white points at base. Hind wing grey suffused with brown, the veins brown; a slight brown terminal line and faint line at base of cilia from apex to vein 2; the underside whitish irrorated with brown especially on costal area, a sinuous brown postmedial line.

Ab. 1. *ærata*. Fore wing without the white spots on the stigmata.

Hab. Canada, Montreal (*Lyman*), 1 ♀; U.S.A., Eastern and Middle States, Massachusetts, New York, Illinois (*Doubleday*), 1 ♂, 2 ♀ type. *Exp.* ♂ 34, ♀ 40 millim.

Larva. Lyman, Can. Ent. xl. p. 252.

Purplish brown with dorsal and subdorsal cream-coloured or whitish stripes, continuous, the 1st four abdominal segments rather darker; warts dark; head yellowish brown with purplish-brown streak at sides; thoracic and anal shields yellow, the former purple-brown at sides. Food-plants: *Arctium lappa* and Burdock, boring in the stems.

4400. Papaipema nebris. (Plate CXXXIX. fig. 7.)

Gortyna nebris, Guen. Noct. i. p. 124 (1852).
Gortyna nitela, Guen. Noct. i. p. 124 (1852); Riley, Am. Ent. i. p. 22,

f. 11; Le Baron, 3rd Rept. Ins. Ill. p. 141, ff. 1, 2; Pack. 9th Ann. Rept. Geol. Surv. p. 719, pl. 65. f. 6; Saund. Fruit Insects, p. 334, ff. 347–8; Lint. 1st Rept. New York State Ent. p. 110, f. 26; Smith, Cat. Noct. N. Am. p. 178.

Head and thorax reddish brown mixed with grey-white; vertex of head whitish; antennæ with the shaft whitish towards base; tarsi ringed with white; abdomen yellowish white suffused with reddish brown, the crests darker. Fore wing olive-brown tinged with grey, the postmedial area somewhat paler; antemedial line indistinct, brown defined slightly by whitish on inner side, somewhat angled outwards below costa, incurved in cell and bent outwards above inner margin; claviform represented by two small white spots defined by brown; orbicular small, conical, white defined by brown and with brown point in centre; reniform a small white lunule defined by brown with white spot above it and three white points below it; postmedial line slight, brown defined on outer side by whitish, slightly bent outwards below costa, oblique and slightly sinuous below vein 4, some white points beyond it on costa; subterminal line represented by a series of slight white marks defined on inner side by small dentate brown marks, excurved below vein 7 and at middle and bent outwards to tornus; a slight brown terminal line; cilia brown with slight pale line at base. Hind wing pale grey-brown with a reddish tinge; cilia with a slight pale line at base; the underside whitish tinged and irrorated with brown especially on apical half of terminal area, a slight discoidal point.

Ab. 1. *nitela*. Fore wing with the claviform, orbicular, and reniform obscure without white spots.

Hab. Canada; U.S.A., South to Georgia and West to Rocky Mts., Massachusetts, Cambridge (*Burgess*), 1 ♀, New York (*Packard*), 2 ♂, Rye (*Bird*), 1 ♂, 1 ♀, Illinois (*Doubleday*), 4 ♂, 1 ♀, type and type *nitela*, Algon, 1 ♂. *Exp.* 38–42 millim.

Larva. Head light brown with a curved black stripe on each side from ocelli to occiput. Body sordid whitish, shaded with purplish in the middle; dorsal and subdorsal diffused whitish lines, lost centrally in the purplish shade; cervical shield and anal plate large, brown with black sides; tubercles black, a large brown area around iv.; thoracic feet black. Food-plants: stems of various plants, *Ambrosia trifida*, Burdock, &c.—H. G. D.

4401. Papaipema duplicata. (Plate CXXXIX. fig. 8.)

Papaipema duplicatus, Bird, Can. Ent. xl. p. 25 (1908).

♀. Head and thorax deep bronze-brown, the scales tipped with grey-white; abdomen greyer mixed with brown. Fore wing deep bronze-brown irrorated with white, some purple-grey suffusion beyond postmedial line; antemedial line indistinct, double, obsolete towards costa, incurved from cell to vein 1 and bent outwards above inner margin; orbicular a faint round dark spot; reniform a

faint dark bar with slight pale line in middle; traces of an oblique dark line from lower angle of cell to inner margin; postmedial line double, bent outwards below costa and oblique below vein 5; subterminal line represented by a series of slight yellowish-white lunules, somewhat angled outwards at vein 7 and excurved at middle. Hind wing greyish suffused and irrorated with cupreous brown; the underside whitish slightly irrorated with brown, thickly on costal area, a slight discoidal spot and indistinct rather diffused curved postmedial line.

Ab. 1. Fore wing with the postmedial and subterminal lines obsolescent.

Hab. U.S.A., New York, Rye (*Bird*), 3 ♀. *Exp.* 46 millim.

Larva. Dull semihyaline whitish, dorsal line continuous; head chestnut-brown. Food-plant, *Collinsonia canadensis*: the larva entering the stem a few inches above the ground and boring down into the woody root-stock, where a cell is formed.

4402. Papaipema maritima. (Plate CXXXIX. fig. 9.)

Papaipema maritima, Bird, Can. Ent. xli. p. 59 (1909).

Head and thorax red-brown, the scales tipped with white; abdomen ochreous white mixed with red-brown. Fore wing cupreous red-brown irrorated with purplish white; a very indistinct oblique waved brown antemedial line; postmedial line indistinct, brown slightly defined by white on outer side, oblique from below costa to vein 6, then inwardly oblique. Hind wing white suffused and irrorated with reddish brown; the underside with rather diffused curved postmedial line.

Hab. U.S.A., New York, Rye (*Bird*), 1 ♂, 3 ♀ cotypes. *Exp.* 46 millim.

Larva. Food-plant, *Helianthus giganteus*.

4403. Papaipema eupatorii. (Plate CXXXIX. fig. 10.)

Gortyna eupatorii, Lyman, Can. Ent. xxxvii. p. 312 (1905).

♂. Head and thorax deep bronze-brown, the scales tipped with grey-white; abdomen greyer mixed with brown. Fore wing deep bronze-brown mixed with purplish grey, the area beyond the postmedial line tinged with purple to near termen; antemedial line indistinct, dark, incurved, from cell to inner margin; claviform a faint dark mark; orbicular an indistinct round dark spot; reniform faintly defined by dark brown; an oblique dark line from lower angle of cell to inner margin; postmedial line indistinct and defined by whitish on outer side, slightly bent outwards below costa, then oblique; subterminal line formed by white scales defined on inner side by slight dark marks, excurved below vein 7 and at middle and angled inwards at discal fold and vein 2; cilia with a brown

line through them. Hind wing greyish suffused with cupreous brown, the cilia rather paler with a brown line through them; the underside whitish irrorated with brown especially on costal and terminal areas, a slight discoidal bar and diffused oblique post-medial line.

Hab. Canada, Montreal, Quebec; U.S.A., Pennsylvania, New Brighton (*Bird*), 1 ♂. *Exp.* 42 millim.

Larva. Bird, Can. Ent. xxxix. p. 312.

Pale sienna-brown; dorsal, subdorsal, and lateral lines broad, cream-coloured, absent on 1st four abdominal somites; tubercles weak; head yellow. Food-plant, *Eupatorium.*

4404. Papaipema necopina. (Plate CXXXIX. fig. 11.)

Gortyna necopina, Grote, Can. Ent. viii. p. 25 (1876); Smith, Cat. Noct. N. Am. p. 179.

Head and thorax reddish brown irrorated with grey-white; antennæ with the basal joint white, the shaft ringed with white; abdomen ochreous white suffused with reddish brown. Fore wing reddish brown thickly irrorated with grey-white and without trace of markings. Hind wing whitish thickly irrorated with pale reddish brown especially on terminal area; cilia white mixed with reddish brown; the underside white irrorated with reddish brown especially on costal and terminal areas.

Hab. U.S.A., New York, Buffalo, 1 ♂, 1 ♀ type. *Exp.* ♂ 36, ♀ 48 millim.

Food-plant, *Helianthus tuberosus.*

4405. Papaipema imperturbata. (Plate CXXXIX. fig. 12.)

Papaipema imperturbata, Bird, Can. Ent. xxxix. p. 274 (1907).

♀. Head and thorax dark brown largely mixed with grey-white; abdomen grey thickly irrorated with brown. Fore wing deep bronze-brown thickly irrorated with white and without trace of markings. Hind wing whitish irrorated with brown; a fine terminal brown line from apex to vein 2; the underside with the costal area thickly irrorated with brown.

Hab. U.S.A., Pennsylvania, New Brighton (*Bird*), 1 ♀ cotype. *Exp.* 32 millim.

Larva. Pale sienna-brown; lines broad, straw-coloured, the dorsal line uninterrupted, the others interrupted on somites 3 to 7; tubercles minute; spiracles and legs black head shining reddish. Food-plant, *Helianthus divaricatus.*

Genus OGDOCONTA.

Type.
Ogdoconta, Butl. A. M. N. H. (6) vii. p. 462 (1891) ..... *cinereola.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately fringed with scales in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the prothorax with long oblique flattened crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on 1st two segments. Fore wing with the apex rectangular, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with oblique white band from apex to inner margin beyond middle ..... *muscula.*
B. Fore wing without oblique white band from apex to inner margin.
  a. Fore wing with the postmedial line bent outwards below costa, then oblique and nearly straight.
    a^1. Fore wing with distinct whitish annulus to reniform constricted at middle.
      a^2. Fore wing with the medial area black-brown and much darker than the postmedial area, the postmedial line obsolescent ..... *carneola.*
      b^2. Fore wing with the medial area red-brown, the postmedial area pinkish, the postmedial line distinct ..... *cinereola.*
    b^1. Fore wing with the reniform an ill-defined pale lunule ..... *moreno.*
  b. Fore wing with the postmedial line excurved at middle and oblique below vein 4.
    a^1. Fore wing with the reniform angled inwards on median nervure to below orbicular ..... *tacna.*
    b^1. Fore wing with the reniform constricted at middle, but not angled inwards on median nervure ..... *lilacina.*
    c^1. Fore wing with the reniform elliptical ..... *cymographa.*

*4406. Ogdoconta muscula. (Plate CXXXIX. fig. 13.)

Plagiomimicus musculus, Schaus, J. N.Y. Ent. Soc. vi. p. 144 (1898).

♂. Head and thorax grey irrorated with dark brown; abdomen grey mixed with brown, the anal tuft ochreous. Fore wing grey-white tinged in places with ochreous and very thickly irrorated with dark brown; an indistinct antemedial grey line obtusely angled on median nervure, then oblique; a straight oblique white band from apex to inner margin beyond middle, towards which it is broader and diffused on outer side and with traces of a line beyond it. Hind wing white slightly irrorated with brown, especially towards apex and termen; the underside with the costal area except towards base and apical area irrorated with dark brown.

Hab. Mexico, Oaxaca, type † ♂ in Coll. U.S. Nat. Mus. *Exp.* 30 millim.

*4407. Ogdoconta carneola.

Telesilla carneola, Smith, Trans. Am. Ent. Soc. xviii. p. 110 (1891); id. Cat. Noct. N. Am. p. 246.

Head and thorax grey tinged with flesh-colour or purplish; abdomen grey. Fore wing purplish red irrorated with grey, the medial area suffused with blackish brown; subbasal line very indistinct, formed of white scales; antemedial line fine, grey, slightly excurved; orbicular and reniform with grey annuli, the former small, round, the latter somewhat constricted at middle; postmedial line hardly defined except by the contrast between the medial and postmedial areas, with slight dark streaks on the veins ending in white points; terminal area suffused with brown; subterminal line hardly traceable, interrupted, irregular; cilia dark, with a grey line at middle. Hind wing yellowish tinged with fuscous at base, darker towards termen; cilia with a pale line at base; the underside pale at base, a small dark discoidal spot and broad postmedial line.

Hab. U.S.A., New Mexico, Las Vegas. *Exp.* 25 millim. This species is unknown to me.

4408. Ogdoconta cinereola.

Placodes cinereola, Guen. Noct. ii. p. 316, pl. 15. f. 1 (1852); Herr.-Schäff. Aussereur. Schmett. p. 68, f. 215; Smith, Cat. Noct. N. Am. p. 245
Miana atomaria, Wlk. xxxii. 675 (1865).

Head and thorax rufous mixed with white, the prothoracic crest brown tipped with white; palpi blackish with some white scales; pectus and legs whitish mixed with fuscous; abdomen whitish tinged with rufous and irrorated with brown, the crests darker. Fore wing whitish suffused with rufous and slightly irrorated with

Fig. 22.—*Ogdoconta cinereola*, ♂. ½.

brown, the costal half of basal area, the medial area and termen suffused with red-brown; subbasal line slight, white, curved, from costa to median nervure; antemedial line white, slightly angled outwards below costa, excurved in submedian interspace; orbicular and reniform with white annuli, the former oblique elliptical, touching antemedial line, the latter figure-of-8-shaped; postmedial line double filled in with white, strongly bent outwards below

costa, oblique and sinuous below vein 5, some white points beyond it on costa; subterminal line whitish defined on inner side by brown, angled outwards at vein 7 and excurved at middle; a fine waved white line just before termen. Hind wing white tinged and irrorated with pale rufous; a fine brown terminal line; cilia white with a faint brown line through them; the underside white irrorated with brown, the costal and terminal areas tinged with rufous, a faint diffused curved postmedial line.

Hab. Canada; U.S.A., Massachusetts, Beverley (*Burg*), 3 ♂, New York (*Doubleday, Packard*), 8 ♂, 3 ♀ type, Evans Center (*Grote*), 1 ♂, Delaware, Illinois, Virginia (*Scudder*), 1 ♀, Alabama, 1 ♀, Minnesota, Nebraska, Texas. *Exp.* 28–32 millim.

Larva. Coquillet, N. Am. Ent. i. p. 52.

Green, subdorsal area paler; dorsal and subbasal lines whitish, the subdorsal area with a series of whitish points; stigmatal stripe white; ventral surface deep green; head smooth, green with a whitish stripe at sides and inverted Y-shaped white mark on frons.

*4409. **Ogdoconta moreno.** (Plate CXXXIX. fig. 14.)

Ogdoconta moreno, Barnes, Can. Ent. xxxix. p. 96 (1907).

Head and thorax whitish mixed with olive-brown; abdomen whitish tinged with brown. Fore wing whitish suffused with pale olive; subbasal line represented by a slight striga from costa; antemedial line dark defined by whitish on inner side, almost erect and hardly curved; orbicular and reniform represented by very ill-defined pale marks; postmedial line dark defined by whitish on outer side, slightly bent outwards below costa, then oblique and nearly straight; subterminal line pale, excurved below vein 7 and at middle; a terminal series of slight dark lunules; cilia pale. Hind wing whitish tinged with brown especially towards termen; the underside whitish, the costal and terminal areas irrorated with brown, a distinct postmedial line.

Hab. U.S.A., Arizona, Babaquivera, Huachuca and Chiricahua Mts. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

4410. **Ogdoconta tacna.** (Plate CXXXIX. fig. 15.)

Caradrina tacna, Barnes, Can. Ent. xxxvi. p. 167 (1904).

♂. Head and thorax brown mixed with white; tarsi brown ringed with white; abdomen ochreous white suffused with brown. Fore wing reddish brown irrorated with white; subbasal line slight, white, curved, from costa to median nervure; antemedial line indistinct, double filled in with whitish, minutely waved towards costa and angled inwards on vein 1; orbicular and reniform defined by white, the former oblique, acute at lower extremity, the latter

constricted at middle and angled inwards on median nervure to lower edge of reniform; postmedial line brown defined by whitish on outer side and with slight dark points beyond it on the veins, bent outwards below costa, slightly incurved at discal fold and oblique below vein 4, some white points beyond it on costa; subterminal line fine, white, minutely waved, angled outwards at vein 7 and excurved at middle; a terminal series of dark lunules defined on inner side by a fine waved white line. Hind wing whitish suffused with brown especially on apical area; a brown terminal line; the underside whitish, the costal area and terminal area to vein 2 irrorated with brown.

Hab. U.S.A., Texas, Shovel Mts., 1 ♂ cotype. *Exp.* 28 millim.

4411. Ogdoconta lilacina.

Celæna lilacina, Druce, P. Z. S. 1890, p. 512; id. Biol. Centr.-Am., Het. ii. p. 478, pl. 93. f. 14.

♂. Head and thorax cupreous red-brown mixed with violaceous grey; pectus and legs whitish, the tarsi brown ringed with white; abdomen fuscous, the genital tufts pale ochreous, the ventral surface irrorated with white. Fore wing cupreous red-brown irrorated and in parts suffused with violaceous grey especially on postmedial area; subbasal line represented by some violaceous suffusion below costa and cell; antemedial line violaceous, diffused, oblique, sinuous; orbicular hardly traceable and confluent with the antemedial line; reniform defined by violaceous and with some violaceous irroration in centre, constricted at middle; postmedial line indistinct, violaceous, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some whitish points beyond it on costa; subterminal line violaceous defined on inner side by brown suffusion, excurved below vein 7 and at middle; a series of slight violaceous lunules just before termen; a fine pale line at base of cilia. Hind wing greyish brown; cilia brown, pale ochreous at base and with whitish tips; the underside whitish irrorated with brown, a slight brown discoidal spot.

Hab. Panama, Chiriqui (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 30 millim.

4412. Ogdoconta cymographa, n. sp. (Plate CXXXIX. fig. 16.)

Celæna lilacina, Druce, Biol. Centr.-Am., Het. ii. p. 478 (part.).

♂. Head and thorax cupreous red-brown mixed with violaceous grey; pectus and legs ochreous white mixed with some brown, the tarsi brown ringed with white; abdomen grey suffused with reddish brown, the ventral surface whitish irrorated with brown. Fore wing cupreous red-brown irrorated and suffused with violaceous grey except on terminal area; antemedial line red-brown defined by whitish on inner side, waved, inwardly oblique from

cell to inner margin; orbicular faintly defined by brown, round, confluent with antemedial line; reniform faintly defined by brown, elliptical, with whitish patch on its outer edge; an indistinct brown medial line, oblique from costa to lower angle of cell across lower part of reniform, then inwardly oblique; postmedial line brown defined by whitish on outer side, bent outwards below costa, then minutely dentate, slightly incurved at discal fold, then oblique, some whitish points beyond it on costa; subterminal line represented by whitish scales slightly defined on inner side by red-brown, somewhat waved; a series of slight whitish lunules just before termen. Hind wing whitish suffused and irrorated with cupreous brown, the cilia paler; the underside white slightly irrorated with brown.

Hab. Mexico, Vera Cruz, Atoyac (*Schumann*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 28 millim.

Genus GERODA.

	Type.
Geroda, Wlk. xix. 832 (1859)	*xeneusalis.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male minutely serrate and ciliated; thorax clothed almost entirely with scales, the prothorax with long flattened crest projecting obliquely backwards, the metathorax with spreading crest; tibiæ moderately fringed with hair; build slender; abdomen with dorsal crest at base only. Fore wing with the costa strongly arched at base, the apex produced and acute, the termen excised below apex and more or less excurved at middle, then oblique to tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of disco-cellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the reniform a narrow white lunule angled inwards on median nervure ..... *cornifera.*
B. Fore wing with the reniform with complete white annulus. *excisa.*
C. Fore wing with the reniform figure-of-8-shaped, its lower part with white annulus, its upper part incomplete. *leucocycla.*
D. Fore wing with the reniform yellow, its lower part with rufous spot and white annulus ..... *xeneusalis.*

4413. Geroda cornifera.

Deva cornifera, Wlk. xxxiii. 849 (1865).

♂. Head, thorax, and abdomen rufous; pectus whitish. Fore wing rufous; a black subbasal point in cell; a strongly waved antemedial dark line, angled inwards on vein 1; orbicular represented by a black point; reniform white slightly defined by black, very narrow, produced to a long excurved point above and angled inwards on median nervure; medial line rather indistinct, excurved from costa to discal fold beyond the cell, then incurved to lower angle of cell and oblique to inner margin; postmedial line fine,

dark, dentate and produced to black points on the veins, excurved from costa to vein 4, then incurved, an oblique white bar beyond it from costa; cilia tipped with white except at apex and middle. Hind wing pale red with slight dark terminal line; cilia yellow;

Fig. 23.—*Geroda cornifera*, ♂. ½.

the underside whitish tinged and irrorated with red, a black discoidal lunule, curved dentate postmedial line, and terminal series of striæ from apex to vein 4.

Hab. ignotus (? Brazil), 1 ♂ type. *Exp.* 34 millim.

*4414. Geroda excisa. (Plate CXXXIX. fig. 17.)

Macapta excisa, D. Jones, Trans. Ent. Soc. 1908, p. 159.

♂. Head and thorax bright rufous, some of the scales tipped with white, pectus and legs with grey mixed; abdomen grey mixed with brown. Fore wing with the termen slightly excurved at middle; rufous tinged with grey especially on costal area and slightly irrorated with fuscous, the costa with series of minute white streaks; a subbasal white point in cell; antemedial line fuscous, oblique, very slightly waved, bent inwards to inner margin; claviform and orbicular absent; reniform small with red-brown centre and white annulus slightly defined by blackish; postmedial line fuscous, very minutely waved, oblique from costa to vein 7, excurved to vein 5, then incurved, a series of black points beyond it on the veins; an indistinct dark subterminal line diffused on inner side, incurved below vein 3. Hind wing fuscous brown, the costal area whitish to beyond middle; cilia white; the underside whitish suffused with rufous and irrorated with fuscous except on inner area, a slight dark discoidal spot and postmedial dentate line produced to black points on the veins.

Hab. Brazil, Bahia in Mus. Oxon., São Paulo, type † in Coll. D. Jones. *Exp.* 24 millim.

*4415. Geroda leucocycla. (Plate CXXXIX. fig. 18.)

Geroda leucocycla, Druce, A. M. N. H. (8) iii. p. 460 (1909).

♀. Head, thorax, and abdomen bright rufous; tarsi ringed with

white. Fore wing greyish suffused with bright rufous, the outer part of medial area and the terminal area with a faint fuscous tinge, a white point at base of cell; subbasal line represented by a white striga from costa and point on median nervure, a white point beyond it in cell; antemedial line blackish defined on inner side by white, minutely waved and obliquely curved; orbicular absent; reniform figure-of-8-shaped, white defined by blackish, its upper part almost obsolete; postmedial line dark, defined on outer side by rufous and by whitish at costa and inner margin, oblique from costa to vein 6, then dentate, incurved below vein 4, a series of black and white points beyond it on the veins and some white points on costa; subterminal line absent; a terminal series of white points; a fine whitish line at base of cilia. Hind wing fuscous brown with a cupreous gloss; cilia rufous and brown with a whitish line at base; the underside greyish suffused with rufous and slightly irrorated with white, a black discoidal striga, a double postmedial series of small black spots, excurved to vein 2, then oblique and single.

Hab. Colombia, Minca (*H. H. Smith*), type † ♀ in Coll. Druce. *Exp.* 28 millim.

4416. Geroda xeneusalis. (Plate CXXXIX. fig. 19.)

Geroda xeneusalis, Wlk. xix. 833 (1859).

♀. Head and thorax rufous mixed with greyish; tarsi with pale rings; abdomen grey irrorated with red-brown. Fore wing with the termen strongly excurved at middle; rufous mixed with some grey and slightly irrorated with fuscous, the veins greyish; a yellowish tinge below base of cell; antemedial line indistinct, curved, waved; orbicular absent; reniform golden yellow, its lower part with rufous spot in centre and white annulus defined by black; postmedial line indistinct, slightly bent outwards below costa, then minutely dentate, and with series of black points beyond it on the veins, excurved to vein 5, then oblique; an indistinct diffused yellowish subterminal band; a fine dark terminal line; cilia tipped with white except at middle. Hind wing greyish, almost entirely suffused with fuscous brown and with a faint reddish tinge, the costal area pale to beyond middle; cilia yellowish at tips; the underside whitish thickly irrorated with rufous, a slight dark discoidal spot and curved dentate postmedial line produced to black points on the veins.

♂. Fore wing with the reniform filled in with rufous.

Hab. Brazil, Rio Janeiro, type † ♂ in Mus. Oxon., Organ Mts., Tijuca (*Wagner*), 1 ♀. *Exp.* 30 millim.

Genus MACAPTA.

	Type.
Makapta, Schaus, Pr. U.S. Nat. Mus. xxx. p. 99 (1906)	*carnescens.*
Kohlera, Schaus, Pr. U.S. Nat. Mus. xxx. p. 99 (1906)	*nebula.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and moderately scaled, the 3rd typically long; frons smooth; eyes large, rounded; tegulæ produced to a slight dorsal ridge; thorax clothed chiefly with scales, the prothorax with very long oblique flattened crest, the metathorax with slight crest; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex somewhat produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole: 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with rather long branches.

A. Palpi upturned, the 3rd joint short.
  a. Fore wing with the postmedial line double ..... *bruma.*
  b. Fore wing with the postmedial line single ..... *psectrocera.*

4417. Macapta bruma.

Kohleria bruma, Schaus, Pr. U.S. Nat. Mus. xxx. p. 100 (1906).

Head and thorax bright rufous, the scales tipped with white; abdomen whitish tinged with brown. Fore wing greyish irrorated and suffused with rufous, the basal half and terminal area rather more rufous; an indistinct rufous subbasal line from costa to submedian

Fig. 24.—*Macapta bruma*, ♂. ½.

fold; antemedial line double, incurved from costa to median nervure and excurved in submedian interspace; orbicular and reniform round, grey defined by rufous and with slight rufous centres; a diffused rufous medial line excurved from costa to median nervure, then oblique; postmedial line double, bent outwards below costa, slightly incurved at discal fold, incurved below vein 4, some grey points beyond it on costa; subterminal line rufous, minutely waved and rather diffused, oblique below vein 7; a fine rufous terminal line with indistinct greyish lunules before it. Hind wing pale suffused and irrorated with pale reddish brown; a fine brown terminal line; cilia whitish, the underside whitish irrorated with

rufous, a dark discoidal point and indistinct sinuous postmedial line.

Hab. Brazil, Rio Janeiro (*E. Wilson*), 1 ♂, Castro Paraña. *Exp.* 30 millim.

4418. **Macapta psectrocera**, n. sp. (Plate CXXXIX. fig. 20.)

♂. Head and tegulæ yellow mixed with fiery red; palpi brown, whitish at tips; shaft of antennæ white ringed with brown; thorax red-brown with the vertex whitish; pectus, legs, and abdomen whitish irrorated with brown. Fore wing greyish almost wholly suffused with deep cupreous brown, the postmedial area rather paler; traces of a waved brown subbasal line from costa to vein 1; antemedial line indistinctly double, filled in with greyish, waved and somewhat oblique; orbicular with faint whitish annulus, somewhat elongate elliptical; reniform faint, greyish, slightly defined by brown on inner side; a rather diffused incurved red-brown line from lower angle of cell to inner margin; postmedial line red-brown slightly defined on each side by whitish, bent outwards below costa, then very minutely waved and with white and dark points beyond it on the veins, incurved at discal fold and below vein 4, some whitish points beyond it on costa; subterminal line indistinct, pale, defined on inner side by cupreous brown, slightly angled outwards at veins 7, 6 and excurved at middle; a terminal series of minute black lunules defined on inner side by whitish points. Hind wing white tinged with red-brown especially on terminal area; a fine brown terminal line; the underside whitish, the costal and terminal areas irrorated with brown, a slight discoidal point and traces of a curved postmedial line.

Hab. Colombia (*H. H. Smith*), 1 ♂ type, Bonda. *Exp.* 30 millim.

B. Palpi with the 2nd joint oblique and fringed with hair above, the 3rd joint porrect.

4419. **Macapta rubrescens.**

(*Makapta*) *rubrescens*, Schaus, Trans. Am. Ent. Soc. xxx. p. 166 (1904).

♂. Head, thorax, and abdomen pale purplish pink mixed with

Fig. 25.—*Macapta rubrescens*, ♂. ½.

some whitish especially on ventral surface. Fore wing pale purplish pink; subbasal and antemedial lines absent; orbicular absent; reniform a narrow oblique bar, brown defined by white;

postmedial line very indistinct, bent outwards below costa, then oblique and with short dark streaks beyond it on the veins, some white points beyond it on costa; subterminal line absent. Hind wing pale purplish pink; the underside pinkish suffused with white, the apical area pinker, a slight discoidal spot and postmedial series of minute streaks on the veins.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♂. *Exp.* 32 millim.

Sect. II. Antennæ of male minutely serrate.

A. Fore wing without white streak beyond lower angle of cell.
- *a*. Fore wing with white discoidal bar dilated below ..... *carnescens.*
- *b*. Fore wing without white discoidal bar.
  - *a'*. Fore wing with pure white spot in lower part of reniform.
    - a^2. Fore wing with fascia below base of cell and the orbicular and reniform yellow suffused with red. *lurida.*
    - b^2. Fore wing without fascia below base of cell, the orbicular and reniform not yellow suffused with red ..... *niveiguttu.*
  - *b'*. Fore wing without white spot in lower part of reniform.
    - a^2. Fore wing with the postmedial line double..... *nebula.*
    - b^2. Fore wing with the postmedial line single.
      - a^3. Fore wing with the postmedial line bent outwards below costa and oblique below vein 4.
        - a^4. Fore wing without series of black points beyond postmedial line..... *mursa.*
        - b^4. Fore wing with series of black points beyond postmedial line ..... *marginata.*
      - b^3. Fore wing with the postmedial line excurved from costa to vein 4, then oblique ..... *holophæa.*

B. Fore wing with short white streak beyond lower angle of cell.
- *a*. Fore wing with the white streak beyond lower angle of cell single ..... *albivitta.*
- *b*. Fore wing with the white streak beyond lower angle of cell double ..... *dilucu.*

4420. **Macapta carnescens.** (Plate CXXXIX. fig. 21.)

Makapta carnescens, Schaus, Pr. U.S. Nat. Mus. xxx. p. 99 (1906).

Head and thorax bright rufous, a few of the scales tipped with white; abdomen whitish suffused with rufous, the basal crests pure white. Fore wing bright rufous with a cupreous gloss; an indistinct dark antemedial line incurved in cell, then oblique and angled inwards on vein 1; orbicular absent; reniform a pure white narrow oblique bar somewhat dilated below; a faint diffused oblique line from lower angle of cell to inner margin; postmedial line fine, minutely dentate and produced to short streaks on the veins, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line absent; a fine dark terminal line. Hind wing entirely suffused with glossy brown; cilia pale red-brown;

the underside white thickly irrorated with brown, the costal area suffused with rufous, a faint discoidal lunule and diffused curved postmedial line.

Hab. Brazil, São Paulo (*D. Jones*), 1 ♂, 1 ♀. *Exp.* 32 millim.

4421. **Macapta lurida.** (Plate CXXXIX. fig. 22.)

Fagitana lurida, Schaus, Trans. Am. Ent. Soc. xxi. p. 236 (1894).

♀. Head, tegulæ, and patagia fiery red, thorax red-brown; abdomen dorsally grey-brown, ventrally red-brown. Fore wing red-brown suffused with greyish, the submedian interspace to extremity of claviform and terminal area yellow suffused with fiery red; subbasal line represented by a diffused oblique yellow and red striga from costa; antemedial line very indistinct, brown slightly defined by grey on inner side, oblique, waved; claviform large, confluent with the basal fascia; orbicular and reniform yellow suffused with fiery red, the former round, the latter narrowing below and with pure white spot at lower angle of cell; postmedial line brown with whitish striga at costa, strongly bent outwards below costa, then with series of blackish points beyond it on the veins, very oblique below vein 4, some white points beyond it on costa; subterminal line deep red, very slightly angled outwards at vein 7 and excurved at middle; cilia deep red, white at tips. Hind wing white, the terminal area suffused with pale brown; cilia white; the underside with the costal area irrorated with red and brown, a black discoidal point, slight postmedial line from costa to vein 3, and series of black points on apical half of termen.

Hab. Brazil, São Paulo (*D. Jones*), 4 ♀; Argentina, Gran Chaco, Florenzia (*Wagner*), 2 ♀. *Exp.* 32–36 millim. Type † in Coll. U. S. Nat. Mus.

*4422. **Macapta niveigutta.** (Plate CXXXIX. fig. 23.)

Fagitana niveigutta, Schaus, Trans. Am. Ent. Soc. xxx. p. 150 (1904).

♀. Head and thorax red-brown mixed with white; pectus and legs red-brown; abdomen red-brown with some white laterally at base. Fore wing red-brown slightly irrorated with whitish; subbasal line absent; faint traces of a waved antemedial line; orbicular and reniform faintly defined by red, the former round, the latter oblique elliptical, with elliptical pure white spot at lower angle of cell; some whitish points on postmedial part of costa; postmedial line reddish brown defined on outer side by greyish suffusion, very oblique and straight from costa towards apex to middle of inner margin; subterminal line indistinct, reddish, minutely waved, oblique, slightly excurved at middle; a fine dark terminal line. Hind wing whitish suffused and irrorated with red-brown; a fine dark terminal line; cilia whitish at tips; the underside whitish irrorated with red-brown especially on costal area, a slight discoidal spot.

Hab. Brazil, Castro Paraña (*D. Jones*), type † ♀ in U.S. Nat. Mus. *Exp.* 40 millim.

*4423. Macapta nebula. (Plate CXXXIX. fig. 24.)

Kohlera nebula, Schaus, Pr. U.S. Nat. Mus. xxx. p. 99 (1906).

♂. Head and thorax bright rufous, the scales tipped with white; tarsi slightly ringed with white; abdomen white tinged with rufous, the basal crest dark; the ventral surface deep rufous. Fore wing bright rufous irrorated with whitish, the costal edge darker; an indistinct rufous subbasal line from costa to vein 1; antemedial line double, very minutely waved; claviform small, faintly defined by rufous; orbicular and reniform defined by rufous, the former elliptical; an oblique rather diffused rufous medial line from cell to inner margin; postmedial line double, the outer line indistinct, the inner strong, filled in with whitish, bent outwards below costa, then oblique, slightly incurved below vein 4, some white points beyond it on costa; two well separated, minutely waved, rather diffused subterminal rufous lines, the outer slightly excurved below vein 7 and at middle; termen and cilia deep rufous, the latter with whitish line at base and whitish tips. Hind wing pure white, the costal area slightly tinged with brown; a waved blackish terminal line and the cilia tinged with fuscous from apex to vein 2; the underside with the costal area thickly irrorated with rufous, a blackish discoidal point and slight postmedial line on costal area.

♀. Hind wing entirely suffused with brown, the basal area rather paler.

Hab. Brazil, Castro Paraña in Coll. D. Jones. *Exp.* ♂ 36, ♀ 40 millim.

4424. Macapta mursa.

Fagitana mursa, Schaus, Trans. Am. Ent. Soc. xxi. p. 236 (1894).

♂. Head and thorax bright rufous to purplish brown, irrorated with white; palpi with some blackish scales at base; tarsi ringed with white; abdomen pale rufous, the basal crest with some blackish

Fig. 26.—*Macapta mursa*, ♂. ½.

scales, the ventral surface deep rufous. Fore wing bright rufous to purplish brown irrorated with dark rufous and white; subbasal line represented by slight double striæ from costa; antemedial line indistinct, double, rufous, slightly curved; orbicular and reniform defined by rufous, the former round, the latter open above and below; a slight striga from middle of costa; postmedial line brown,

obsolescent towards costa, strongly bent outwards below costa, then somewhat lunulate, oblique below vein 4; some white points beyond it on costa; subterminal line double, brownish, slightly incurved at discal fold; cilia with a fine pale line at base. Hind wing pure white, the apex slightly tinged with brown; a fine brown terminal line; cilia slightly mixed with brown on apical half; the underside with the costal area suffused and irrorated with rufous, a slight discoidal spot.

♀. Fore wing with white spot on inner edge of reniform; hind wing suffused with fuscous especially towards termen.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♂. *Exp.* 36 millim.

*4425. Macapta marginata. (Plate CXXXIX. fig. 25.)

Fagitana marginata, Schaus, Trans. Am. Ent. Soc. xxx. p. 150 (1904).

♂. Head and thorax dark brown mixed with grey; abdomen grey tinged with brown and irrorated with dark brown. Fore wing grey thickly irrorated with dark brown, the end of cell and area just below it suffused with rufous; subbasal line represented by a slight blackish striga from costa and spot in cell; antemedial line fine, red-brown, slightly excurved below costa, bent outwards below median nervure, then slightly incurved; orbicular small, grey defined by brown, round; reniform a grey bar defined by brown on inner side; postmedial line red-brown defined by grey on outer side, bent outwards below costa, then with series of black points beyond it on the veins, oblique and very slightly incurved below vein 4, some grey points beyond it on costa; subterminal line grey defined by red-brown on inner side, oblique, nearly straight; the termen suffused with dark brown; cilia dark brown at base, ochreous at tips. Hind wing pure white, the apical area, termen, and the veins of terminal area slightly irrorated with fuscous; cilia slightly tinged with fuscous at tips; the underside with the costal area tinged with ochreous and thickly irrorated with fuscous; the terminal area irrorated with fuscous to vein 2, a small black discoidal spot; postmedial line almost obsolete except on costal area, some black points on termen from apex to vein 2.

♀. Fore wing suffused with rufous to postmedial line; hind wing wholly suffused with brown, the terminal area darker; cilia white.

Hab. Brazil, Castro Paraña in Coll. D. Jones. *Exp.* 42 millim.

*4426. Macapta holophæa. (Plate CXXXIX. fig. 26.)

Macapta holophæa, Druce, A. M. N. H. (8) i. p. 298 (1908).

♀. Head and thorax red-brown mixed with dark brown and some grey; tarsi blackish ringed with white; abdomen brown, ventrally irrorated with grey. Fore wing red-brown irrorated with black and some grey; subbasal line very faint, blackish, waved, from costa to submedian fold; antemedial line faint, black, oblique, waved; orbicular and reniform small, indistinct, pale rufous, the former oblique elliptical, some dark brown suffusion in

cell before and between them; postmedial line indistinct, minutely waved, excurved from costa to vein 4, then oblique, a series of black points beyond it on the veins and some pale points on costa; subterminal line indistinct, pale, defined on inner side by blackish suffusion, excurved below vein 7 and at middle; cilia dark brown with pale lines at base and near tips. Hind wing dark brown, rather paler at base; cilia yellowish white with a brown line near base, brown at apex; the underside whitish irrorated with brown, the costal half suffused with rufous, a blackish discoidal point, postmedial series on the veins, and terminal series from apex to vein 2.

Hab. S.E. Peru, Oconeque (*Ockenden*), type † ♀ in Coll. Druce, Huancabamba (*Boettger*). *Exp.* 40 millim.

4427. **Macapta albivitta**, n. sp. (Plate CXXXIX. fig. 27.)

Head and thorax pale brown mixed with whitish and slightly irrorated with black; palpi with small black spots at extremities of 2nd and 3rd joints; frons with lateral black bars; abdomen grey dorsally tinged with fuscous, ventrally irrorated with black, the basal crest tipped with black, small subdorsal and sublateral black spots on terminal segments. Fore wing pale red-brown slightly irrorated with fuscous, the costal edge white; obliquely placed subbasal black points below costa and cell and above vein 1; a small antemedial black spot in submedian fold; orbicular a small black spot; reniform a small very ill-defined yellow and fiery-red lunule with more or less distinct white streak below it extending to postmedial line, which is represented by a series of black points on the veins, bent outwards below costa, excurved to vein 4, then oblique and incurved at submedian fold, some slight black points beyond it on costa; an oblique subterminal series of black points; the terminal area suffused with fuscous below apex; a terminal series of black points defined by slight pale lunules; cilia with a series of black points at tips. Hind wing white suffused with brown except at base; cilia white with a slight diffused brown line through them; the underside with the costal area slightly irrorated with brown.

Ab. 1. Fore wing with black patch beyond the reniform.

Hab Jamaica, Castleton (*Kaye*), 3 ♂, 1 ♀ type, Cinchona (*Kaye*), 2 ♀, Newcastle, 1 ♀. *Exp.* 22–26 millim.

4428. **Macapta dileuca**, n. sp. (Plate CXXXIX. fig. 28.)

♀. Head and thorax yellow mixed with some fiery red; abdomen ochreous white. Fore wing yellow irrorated with brown and some black scales, the costal edge white, the costal area beyond the cell and inner margin irrorated with fiery red; subbasal line absent; antemedial line represented by a few black scales, oblique from costa to submedian fold, then inwardly oblique; claviform absent; orbicular and reniform represented by yellow patches irrorated with red, the latter with white streak below it from lower angle of cell

to postmedial line below vein 4 and short streak above vein 4; a slight diffused oblique medial shade from costa to median nervure and traces of an oblique line from cell to inner margin; postmedial line represented by a double oblique series of minute black points from below costa to inner margin, with another curved series of minute black points beyond it; a slight oblique whitish shade from apex; the terminal area slightly suffused with brown, the veins and interspaces with slight dark streaks; a terminal series of black points. Hind wing white, the termen tinged with ochreous and with terminal series of black points from apex to vein 2; the underside with the costal area slightly irrorated with brown.

Hab. Brazil, Castro Paraña; Argentina, Gran Chaco, Florenzia (*Wagner*), 1 ♀ type. *Exp.* 24 millim.

Genus SELICANIS.

Type.

Selicanis, Smith, Pr. U.S. Nat. Mus. xxii. p. 481 (1900)..... *cinereola*.

Proboscis aborted, minute; palpi upturned, the 2nd joint hardly reaching middle of frons, the 3rd short; frons smooth; eyes large, round; antennæ of male minutely serrate and ciliated; thorax clothed with hair and hair-like scales, the pro- and metathorax with small spreading crests; tibiæ fringed with long hair; abdomen long with some rough hair at base but without crests. Fore wing narrow, the costa almost straight, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4429. Selicanis cinereola.

Selicanis cinereola, Smith, Pr. U.S. Nat. Mus. xxii. p. 481 (1900); Dyar, Cat. Lep. N. Am. p. 179.

♂. Head, thorax, and abdomen red-brown mixed with grey-white, the vertex of head whiter, the scales of thorax tipped with grey. Fore wing red-brown irrorated with grey-white, the medial area somewhat darker brown; the 1st line almost medial, white,

Fig. 27.—*Selicanis cinereola*, ♂. ½.

very slightly incurved below median nervure; claviform and orbicular absent; reniform represented by a white bar with dark brown patch beyond it; postmedial line white, slightly bent outwards below costa, excurved to vein 4 just beyond the reniform, then slightly incurved, some white points beyond it on costa; sub-

terminal line white slightly defined on inner side by dark brown, somewhat excurved below vein 7 and incurved below vein 3; cilia with fine white lines at base and middle and white tips. Hind wing greyish thickly irrorated and suffused with red-brown; cilia with fine white line at base and white tips; the underside with the costal area red-brown irrorated with white.

Hab. U.S.A., Colorado, Glenwood Springs (*Barnes*), 1 ♂, Denver. *Exp.* 34 millim.

Genus **STIBADIUM.**

Type.

Stibadium, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 74 (1874) ..... *spumosa.*

Proboscis fully developed; palpi porrect, extending to just beyond the frons, the 2nd joint moderately fringed with hair below, the 3rd short; frons with large round corneous prominence with raised edges and corneous plate below it; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with rough scales, the pro- and metathorax with spreading crests, the patagia curled upwards at extremity; tibiæ moderately fringed with hair, the fore tibia with large curved claw on inner side; abdomen without crests. Fore wing with the apex produced and acute, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with antemedial white patch below the cell and crescentic spot at lower angle of cell ..... *olvello.*
B. Fore wing without antemedial white patch below the cell or crescentic spot at lower angle of cell.
  a. Fore wing with dark patch on costal area beyond post-medial line.
    a^1. Fore wing with the orbicular filled in with black..... *cocinna.*
    b^1. Fore wing with the orbicular not filled in with black.
      a^2. Fore wing rufous irrorated with dark brown, the veins with dark streaks ..... *laodamia.*
      b^2. Fore wing grey irrorated with white, the medial area suffused with blackish..... *curiosa.*
  b. Fore wing without dark patch on costal area beyond post-medial line.
    a^1. Fore wing with the postmedial line angled outwards at vein 6.
      a^2. Fore wing with the antemedial line angled outwards in submedian fold.
        a^3. Fore wing with the orbicular and reniform present *ochoa.*
        b^3. Fore wing with the orbicular and reniform absent. *aureola.*
      b^2. Fore wing with the antemedial line nearly straight.
        a^3. Fore wing with the postmedial line obliquely incurved below vein 5.
          a^4. Fore wing with the postmedial line fine, whitish.
            a^5. Hind wing white, the terminal area suffused with brown ..... *spumosa.*
            b^5. Hind wing wholly suffused with brown ..... *manti.*
          b^4. Fore wing with the postmedial line diffused whitish ..... *corazona.*
        b^3. Fore wing with the postmedial line incurved below vein 4 ..... *jalada.*
    b^1. Fore wing with the postmedial line excurved from below costa to vein 4, then incurved ..... *navia.*

*4430. Stibadium olvello. (Plate CXXXIX. fig. 29.)

Stibadium olvello, Barnes, Can. Ent. xxxix. p. 94 (1907).

Head and thorax pale and dark olive-brown; abdomen ochreous brown. Fore wing pale and dark olive-brown; an oblique subbasal white striga below the cell; a large quadrate antemedial silvery white patch in submedian interspace, its lower inner angle produced to a slight point; a crescentic white spot at lower angle of cell, concave towards costa; postmedial line slight, pale, oblique from costa to vein 6 where it is met by a slight oblique pale streak from apex, then very obliquely excurved; a fine dark terminal line; cilia with a fine pale line at base. Hind wing white with a faint yellowish tinge and slightly suffused with olive on terminal area; cilia yellowish white; the underside with the costal and terminal areas slightly darker.

Hab. U.S.A., New Mexico. *Exp.* 32 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

4431. Stibadium concinna. (Plate CXLVIII. fig. 5.)

Stibadium concinnum, Dyar, Proc. Ent. Soc. Wash. xi. p. 23 (1909).

♂. Head and thorax fuscous brown mixed with white; abdomen white tinged with rufous. Fore wing grey-white almost entirely suffused with fuscous brown and slightly irrorated with white; antemedial line white, sinuous to submedian fold, then inwardly oblique; orbicular and reniform defined by white, the former filled in with velvety black, large, round, the latter strongly indented on outer side; postmedial line white, obliquely downcurved from costa to vein 6 where it is angled outwards, very oblique and slightly incurved below vein 4, a blackish patch beyond it on costa; subterminal line whitish, defined on inner side by slight black marks from discal fold to inner margin, incurved below vein 3; a fine black terminal line; cilia brown with white lines at base and near tips. Hind wing white, the terminal area suffused with brown; a fine black terminal line; cilia white at base, brown at tips; the underside with the costal and terminal areas suffused and irrorated with brown.

Hab. Mexico, Orizaba (*Müller*), 1 ♂. *Exp.* 26 millim.

4432. Stibadium laodamia.

Plusiodes laodamia, Druce, P. Z. S. 1890, p. 520; id. Biol. Centr.-Am., Het. ii. p. 506, pl. 96. f. 16.

♂. Head and thorax red-brown mixed with grey; palpi, pectus, and legs rufous; abdomen rufous, the anal tuft yellowish. Fore wing pale rufous suffused in parts with red-brown and irrorated with dark brown, the terminal area paler, the veins streaked with dark brown; antemedial line red-brown, curved, expanding into a spot at costa; orbicular and reniform defined by dark brown, large, the former round; a semicircular dark red-brown patch on costa

before apex crossed by the diffused pale postmedial line which is oblique from costa to below vein 7 near termen, then defined by red-brown on inner side, very oblique to below vein 2, then less oblique; a brown subterminal shade from vein 3 to inner margin, oblique to below vein 2; a fine red-brown terminal line; cilia yellowish. Hind wing ochreous almost wholly suffused with red-brown; an indistinct curved ochreous postmedial line; a fine red-brown terminal line; cilia yellow; the underside yellow, the inner half whitish to near tornus, the apical area slightly irrorated with brown, an indistinct postmedial line from costa to vein 4, oblique to discal fold where it is angled; a fine red-brown terminal line.

Hab. MEXICO, Guerrero, Amula (*H. H. Smith*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 42 millim.

4433. Stibadium curiosa. (Plate CXXXIX. fig. 30.)

Stibadium curiosum, Neum. Papilio, iii. p. 141 (1883); Smith, Cat. Noct. N. Am. p. 262.

Head and thorax white and dark brown mixed; antennæ white ringed with brown; tarsi ringed with white; abdomen whitish tinged with brown. Fore wing grey tinged with brown and irrorated with white scales, the medial area blackish except towards costa before the postmedial line which has a semicircular black-brown patch beyond it on costa; antemedial line white, almost straight and erect; orbicular and reniform defined by white, the former very oblique elliptical, the latter with straight inner edge, its outer edge excised at middle and produced at lower extremity; postmedial line white slightly defined on each side by dark brown, oblique from costa to vein 6, obliquely excurved to vein 3, then oblique; subterminal line indistinct, whitish, slightly defined on inner side by dark brown, excurved from the costal patch to vein 3, then incurved; a slight dark terminal line; cilia white with a diffused black-brown line through them. Hind wing white slightly irrorated with brown, the terminal area thickly irrorated except towards tornus; the underside white, the costal and terminal areas slightly irrorated with brown.

Hab. U.S.A., Arizona; MEXICO, Guadalajara (*Schaus*), 1 ♂, 2 ♀. *Exp.* 32 millim.

* 4434. Stibadium ochoa. (Plate CXXXIX. fig. 31).

Stibadium ochoa, Barnes, Can. Ent. xxxvi. p. 241 (1904).

Head iron-grey, the palpi chestnut-brown; thorax chestnut-brown; abdomen pale ochreous brown. Fore wing pale ochreous tinged with olive-green and chestnut-brown especially on medial area in and below cell, irrorated with violaceous scales especially on basal and costal areas; antemedial line dark olive-green, very oblique from costa to submedian fold where it is acutely angled, then inwardly oblique; orbicular and reniform faintly defined by dark olive, the former round; a dark olive medial shade, oblique

from costa to reniform, inwardly oblique from lower angle of cell to inner margin; postmedial line dark olive, very oblique from costa to vein 6, then inwardly oblique and very slightly sinuous, its acute angle below costa met by an oblique streak from apex; subterminal line only defined by the terminal area being paler and yellower without violaceous irroration; cilia yellowish at base, darker at tips. Hind wing pale ochreous faintly tinged with olive and with slight dark irroration except on terminal area; a slight discoidal bar and faint curved postmedial and subterminal lines; the underside with the costal and terminal areas pale yellowish, a distinct discoidal bar and postmedial line.

The frontal structure consists of an elliptical depression with central channel and roughened sides.

Hab. U.S.A., Arizona, Wilgus. *Exp.* 34 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

4435. Stibadium aureola. (Plate CXXXIX. fig. 32.)

Stibadium aureolum, H. Edw. Papilio, ii. p. 126 (1882); Smith, Cat. Noct. N. Am. p. 262.

♀. Head and thorax ochreous mixed with red-brown; frons tinged with fuscous; fore legs tinged with fuscous; abdomen pale yellow. Fore wing ochreous suffused with rufous and irrorated with white, the inner half of medial area darker, an oblique pale yellow band on postmedial area from apex to inner margin; antemedial line fine, white, obsolescent towards costa, oblique to submedian fold where it is angled outwards, then obliquely incurved; postmedial line fine, white, oblique from costa to vein 6 where it is angled outwards, then very oblique and slightly sinuous; the yellow postmedial band slightly defined on each side by olive; subterminal line fine, white, arising from apex, oblique and slightly sinuous; cilia red-brown mixed with white and with fine white lines at base and middle. Hind wing yellowish white irrorated with red-brown especially on terminal area; cilia white with a slight brown line through them; the underside white with faint diffused curved postmedial line, the termen slightly tinged with yellow and irrorated with brown.

Hab. U.S.A., Arizona, 1 ♀. *Exp.* 36 millim.

4436. Stibadium spumosa.

Stibadium spumosum, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 74 (1874); Smith, Cat. Noct. N. Am. p. 262.

Head and thorax reddish brown irrorated with white; abdomen whitish tinged with red-brown. Fore wing reddish-brown thickly irrorated with whitish, the area beyond the postmedial line somewhat paler, the base of inner margin whitish; antemedial line very indistinct, whitish, slightly excurved from costa to median nervure, then nearly erect; stigmata faintly defined by white, the

orbicular irregularly rounded; postmedial line more distinct, whitish, oblique from costa to vein 6, excurved to vein 5, then obliquely incurved; a slight dark terminal line and faint pale line at base of cilia. Hind wing white, the veins brownish, the terminal area

Fig. 28.—*Stibadium spumosa*, ♂. ½.

irrorated and suffused with reddish brown; cilia brownish with a slight whitish line at base; the underside white, the costal area broadly and the termen except towards tornus irrorated with brown.

Hab. U.S.A., New York, Illinois, Kansas, 1 ♂, 1 ♀ type, Nebraska, Oregon, 1 ♀, Colorado, New Mexico, Albuquerque (*Oslar*), 3 ♂, 1 ♀, Arizona, Phœnix (*Kunzé*), 3 ♂, 5 ♀. *Exp.* 32–40 millim.

*4437. Stibadium manti. (Plate CXL. fig. 1.)

Stibadium manti, Barnes, Can. Ent. xxxvi. p. 243 (1904).

Head and thorax dark brown with some white scales mixed; abdomen grey-brown. Fore wing dark brown slightly irrorated with white scales, the medial area and postmedial costal area darker; subbasal line absent; antemedial line slight, white, inwardly oblique and somewhat sinuous; orbicular and reniform defined by white scales, the former round, the latter incompletely defined; postmedial line dark, defined on outer side by whitish, obliquely incurved from costa to vein 6, excurved to vein 5, then incurved; traces of an irregular subterminal line sometimes present; cilia with a fine pale line at base. Hind wing fuscous brown slightly darker towards termen; cilia with pale line at base; the underside grey with faint postmedial line.

Hab. U.S.A., Texas, Kerrville, San Antonio. *Exp.* 32 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

*4438. Stibadium corazona. (Plate CXL. fig. 2.)

Stibadium corazona, Schaus, J. N.Y. Ent. Soc. vi. p. 144 (1898); Druce, Biol. Centr.-Am., Het. ii. p. 569.

♂. Head and thorax whitish mixed with dark brown; tarsi ringed with white; abdomen grey-brown. Fore wing dark olive-brown thickly irrorated with grey-white; antemedial line rather diffused, grey-white, oblique, slightly bent inwards to costa; orbicular and reniform faintly defined by grey-white, the former small, rather oblique elliptical; postmedial line diffused, grey-

white, oblique from costa to vein 6 near subterminal line, then inwardly oblique; subterminal line indistinct, diffused, grey-white, oblique from apex to vein 5, then slightly excurved and incurved below vein 3; a fine dark terminal line and whitish line at base of cilia. Hind wing whitish, almost wholly suffused with glossy ochreous brown; traces of a pale diffused subterminal base; a fine dark terminal line and yellowish line at base of cilia; the underside white irrorated with brown; traces of a diffused curved postmedial line.

Hab. Mexico, Orizaba (*Schaus*), type † ♂ in U.S. Nat. Mus., Guadalajara. *Exp.* 40 millim.

4439. Stibadium jalada. (Plate CXL. fig. 3.)

Stibadium jalada, Schaus, J. N.Y. Ent. Soc. vi. p. 144 (1898).

♀. Head grey, the palpi tinged with rufous; tegulæ grey edged with rufous; patagia rufous; vertex of thorax dark brown mixed with rufous; pectus and legs grey mixed with rufous; abdomen grey. Fore wing grey irrorated with bronze-green and suffused with bronze-green to beyond middle except on costal area; antemedial line very indistinct, bronze-green, oblique from costa to subcostal nervure, then waved; orbicular and reniform faintly defined by bronze-green, the former produced to a point on inner side, the latter rather narrow and with bronze-green bar to it from costa; postmedial line bronze-green, oblique from costa to vein 6, then inwardly oblique and incurved below vein 4, an oblique dark shade from costa towards apex to its angle; the terminal area paler, with traces of a waved subterminal line; a fine brown terminal line. Hind wing whitish suffused with brown; a fine brown terminal line; cilia ochreous white with slight brown line through them; the underside ochreous white faintly irrorated with brown; traces of a diffused curved postmedial line.

Hab. Mexico, Guadalajara (*Schaus*), 1 ♀. *Exp.* 38 millim.

4440. Stibadium navia. (Plate CXL. fig. 4.)

Telesilla navia, Harv. Bull. Buff. Soc. Nat. Sci. iii. p. 10 (1875); Smith, Cat. Noct. N. Am. p. 263.

Head and thorax pale rufous mixed with white; palpi and frons brown; antennæ ringed brown and white; fore legs brown, the tarsi ringed with white; abdomen white. Fore wing pale rufous slightly irrorated with white, the medial and terminal areas red-brown irrorated with white; subbasal line represented by a faint brown striga from costa; antemedial line whitish, oblique and irregularly sinuous to submedian fold, then angled inwards on vein 1; orbicular absent; reniform small, whitish, constricted at middle and with brown points in upper and lower parts; postmedial line whitish slightly defined by brown on outer side, slightly bent outwards below costa, then very minutely waved,

excurved to vein 4, then incurved; subterminal line indistinct, whitish, excurved below vein 7 and at middle and angled inwards at vein 2; a terminal series of white striæ; cilia dark brown mixed with white and with fine white line at middle. Hind wing white, the terminal area rather narrowly irrorated with brown except towards tornus; a fine brown terminal line from apex to submedian fold; the underside with the costa and termen slightly irrorated with brown.

Hab. U.S.A., Texas, 1 ♂, 1 ♀ type, Kerrville, 1 ♂, 1 ♀. *Exp.* 26–30 millim.

Genus **CYTOCANIS**, nov.

Type, *C. denticulosa.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd moderate; frons with large corneous prominence with raised edges, its lower edge produced to a beak-like process; eyes large, round; antennæ of male laminate and almost simple; thorax clothed almost entirely with scales and without crests; tibiæ smoothly scaled, the joints of fore tarsi rather short and the ungues rather large; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4441. Cytocanis denticulosa.

Miana denticulosa, Wlk. xxxii. 676 (1865); Hmpsn. Moths Ind. ii. p. 310.

Head and thorax bright red-brown mixed with whitish; abdomen ochreous white suffused with rufous. Fore wing bright red-brown irrorated with white; a slight curved whitish subbasal line from costa to median nervure; antemedial line fine, white, oblique

Fig. 29.—*Cytocanis denticulosa*, ♂. ½.

from costa to below cell, then angled inwards on vein 1; orbicular and reniform small, slightly defined by white, the former oblique elliptical; postmedial line slight, white, bent outwards below costa, then waved, incurved below vein 4, some white points beyond it on costa; a fine white subterminal line strongly dentate to termen; a white line just before termen; cilia white mixed with red-brown. Hind wing whitish suffused with pale rufous; a fine white subterminal line strongly dentate to the white line just before termen; cilia white mixed with red-brown; the underside white irrorated with rufous.

Hab. Bombay (*Leith*), 1 ♂, Kutch, 3 ♀; Madras, Coimbatore (*Walhouse*), 1 ♂ type. *Exp.* 28–30 millim.

Genus **EULYMNIA**, nov.

Type, *E. pulcherrima*.

Proboscis fully developed; palpi upturned, short, hardly reaching middle of frons and smoothly scaled; frons smooth; eyes large, round; antennæ of male simple, laminate; thorax clothed entirely with scales and without crests; tibiæ slightly fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and non-crenulate; the inner margin somewhat lobed at base and excised towards tornus, which is slightly hooked; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell to near middle.

4442. Eulymnia pulcherrima.

Conservula pulcherrima, Hmpsn. Ann. S. Afr. Mus. ii. p. 295 (1902).

♂. Head, tegulæ, upper edge of patagia, prothorax, and metathorax behind clothed with ochreous and chocolate-red scales, the rest of patagia and thorax violaceous grey; palpi white, red at tips; antennæ with the basal joint white behind; pectus and legs white, the fore legs red-brown in front, the tarsi red-brown ringed with white; abdomen grey with slight white segmental rings, the

Fig. 30.—*Eulymnia pulcherrima*, ♂. ½.

basal crest chocolate-red, the anal tuft tinged with rufous, the ventral surface white. Fore wing violaceous grey, the basal half to vein 1 ochreous irrorated with chocolate-red, more thickly below the cell, the veins streaked with red; an ochreous patch irrorated with red and with red streaks on the veins and two small white spots on its outer edge on costal area towards apex; subbasal line double, red, slightly waved, from costa to submedian fold; antemedial line double, red, angled outwards below costa and cell, then incurved, bent inwards and blackish above inner margin; orbicular and reniform defined by red, their annuli formed of yellowish-white spots divided by red streaks, the former round, the latter elliptical; a dark brown medial line excurved round outer edge of reniform, then oblique; postmedial line double, red and distinct on the costal patch, excurved from below costa to vein 6, then oblique, sinuous, indistinct; subterminal line formed of red scales, indistinct to vein 3, then incurved and prominent; cilia greenish grey with two slight brown lines through them. Hind wing pure white, the costal area and veins 7, 6 suffused with golden brown; a slight brown terminal line. Underside of fore wing white with yellowish, reddish, and fuscous suffusion on terminal half of costal area; hind wing wholly white.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type. *Exp.* 42 millim.

Genus **ETHIOTERPIA**, nov.

Type, *E. neavi*.

Proboscis fully developed; palpi obliquely upturned, hardly reaching middle of frons, which has a large corneous prominence with raised edges; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen clothed with woolly hair but without crests. Fore wing rather long and narrow, the apex rounded, the termen evenly curved and not crenulate; veins 3, 4 from angle of cell; 5 from above angle; 6 from below upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 strongly stalked; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

4443. **Ethioterpia neavi**, n. sp.

♂. Head and thorax creamy white; palpi black with white bands at middle and extremity; frons with lateral black marks; antennæ blackish; thorax with some black scales mixed and with black bands behind tegulæ and on metathorax; tibiæ and tarsi banded with black; abdomen blackish, the extremity and ventral surface white. Fore wing creamy white; some black marks at base of

Fig. 31.—*Ethioterpia neavi*, ♂. ½.

inner area; a subbasal black striga from costa; antemedial line blackish, obsolescent towards costa, oblique to submedian fold where there is a slight streak representing the claviform, then slightly sinuous; an oblique sinuous medial black line, strongly excurved below the cell and with a black striga beyond it from costa; the outer half of medial area almost entirely suffused with fuscous; reniform a large irregular white mark defined by black expanding into a large lobe below costa and into a small lobe on inner side at lower extremity; postmedial line black, slightly sinuous, oblique from costa to discal fold, then incurved, the costa beyond it with a conical black patch with two white points on it, and slight black marks beyond the postmedial line at middle, submedian fold, and inner margin; a faint subterminal dark shade forming brownish patches at and below middle; a fine waved black line on middle of termen; cilia chequered black and white. Hind wing semihyaline white with a faint subterminal shade; the underside with a few black scales on costal area towards apex.

Hab. N.E. Rhodesia, Tanganyika Plateau, Lope Valley (*Neave*), 1 ♂ type. *Exp.* 30 millim.

Genus **EMARGINEA**.

	Type.
Emarginea, Guen. Noct. ii. p. 288 (1852)	*gammophora*.
Dacira, Wlk. xii. 801 (1857)	*combusta*.
Cyathissa, Grote, Bull. U.S. Geol. Geog. Surv. Terr. vi. p. 576 (1881)	*percara*.

Proboscis fully developed; palpi upturned, very short and only reaching middle of frons, which has a slight rounded prominence with corneous plate below it; eyes large, rounded; antennæ of male laminate with slight scale-teeth on base of shaft above; thorax clothed with velvety scales and hair, the prothorax without crest, the metathorax with large spreading crest; mid and hind tibiæ very broadly fringed with hair on outer side, the tarsal joints short and thick; abdomen with dorsal crest at base only and lateral fringes of hair, the male with lateral tufts of hair from base. Fore wing with the apex rounded, the termen excised to vein 4, then curved and not crenulate; the cell short, vein 3 from well before angle of cell; 5 from just above angle; 6 from below upper angle; 7, 8, 10 on a long stalk; 9 typically absent; 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. (*Emarginea*). Fore wing with vein 9 absent; 7 from before 10.

A. Fore wing with the terminal half bright rufous, with black patch on costa ..... *combusta*.
B. Fore wing with the terminal half black with patches of fulvous yellow and white ..... *gammophora*.

4444. **Emarginea combusta.** (Plate CXL. fig. 6.)

Dacira combusta, Wlk. xii. 802 (1857).

♂. Head pure white, the palpi and antennæ except basal joint black; thorax black, the metathorax rufous and white; fore tibiæ at extremity and mid tibiæ at middle with white patches, hind tibiæ with small white spot at base, the tarsi with the 1st two joints white; abdomen fuscous black dorsally, white at sides and fulvous yellow below. Fore wing with the basal half white; a basal black patch angled outwards below cell and retracted to inner margin, followed by some orange suffusion; an antemedial black annulus on costa filled in with orange; a black medial line slightly excurved from costa to median nervure, then slightly sinuous; the terminal half brick-red with a black patch rather diffused outwardly extending to three-fourths of costa and ending in a point on medial line at vein 2; a small V-shaped white mark on costa at middle, followed by a slight red streak below costa; postmedial line represented by minute whitish points on the black area, otherwise obsolete; two white striæ from costa beyond middle; subterminal line only defined by the terminal area being rather deeper red; cilia white, blackish at apex, middle, and above tornus. Hind wing pure white; the underside with the costal area tinged with orange, irrorated with a few black scales and with diffused blackish patch at middle.

Hab. Brazil, Amazon, Villa Nuovo (*Bates*), 1 ♂ type. *Exp.* 24 millim.

4445. Emarginea gammophora.

Emarginea gammophora, Guen. Noct. ii. p. 289, pl. 14. f. 1 (1852).

♂. Head white; palpi black except at tips; antennæ black except at base; thorax deep velvety black, the metathorax bright rufous and white; mid and hind tibiæ with white patches, the tarsi with the 1st three joints white; abdomen black-brown, the basal crest white, the lateral fringes and ventral surface white. Fore wing white, extending on costa to near middle and below the cell to postmedial line, the basal area suffused with orange, the terminal half black suffused with leaden grey leaving a white wedge-shaped apical patch extending to vein 4 and tinged with fulvous yellow on lower half and a rounded fulvous-yellow patch

Fig. 32.—*Emarginea gammophora*, ♂. ½.

at tornus; a black streak below median nervure curved up to base of costa and a short streak above base of inner margin; slight subbasal and antemedial black striæ from costa; a medial fulvous striga from costa near inner edge of the black area, followed by a whitish patch centred with fulvous and with black streak on costa and an oblique white bar from its lower edge to the white area at median nervure; postmedial line indistinct, black slightly defined by whitish scales on outer side, oblique and minutely waved to vein 4, then strongly incurved and defined by white on outer side, a white striga beyond it on costa and a black striga on the apical patch; some slight fuscous suffusion on the fulvous patch at tornus; a terminal series of black striæ; cilia chequered black and white. Hind wing pure white slightly tinged with brown at apex and on termen; the underside with the costal area irrorated with a few black scales.

♀. Fore wing with black patch at base with curved outer edge conjoined at costa to the medial black area, the curved white mark at end of cell reduced; hind wing with rather more brown on terminal area.

Hab. Centr. Brazil, Chapada (*A. Robert*), 1 ♂; S. Brazil, Castro Paraña; Uruguay. *Exp.* 22 millim.

Sect. II. Fore wing with vein 9 present.

A. Fore wing with vein 7 from beyond 10.

a. Fore wing orange with the antemedial and inner medial areas white ..... *olcagina*.

b. Fore wing pale greenish, the medial and postmedial areas suffused with rufous except towards inner margin ..... *niphoplaga*.

4446. Emarginea oleagina.

Dacira oleagina, Dognin, Le Nat. (2) iii. p. 134 (1889).

♂. Head white; palpi black except at tips; antennæ black except basal joint; thorax velvety black with a few white scales on vertex and at tips of patagia; mid tibiæ with white patch at extremity, hind tibiæ with white terminal band, the tarsi with the basal joints white; abdomen black, the basal crests, subbasal fasciæ, anal tuft and ventral surface except at base white. Fore wing pale orange, some white before antemedial line, the area below submedian fold white from antemedial line to tornus; the base black and diffused black streaks below base of cell and above base of

Fig. 33.—*Emarginea oleagina*, ♂. ½.

inner margin; subbasal line represented by a black striga from costa; the costal edge black except at apex; antemedial line black, curved, interrupted from submedian fold to below vein 1; a black annulus on middle of costa filled in with white and with black streak on costa, extending to middle of discocellulars; postmedial line black, waved, erect from costa to vein 4, then incurved, some white points beyond it on costa; a conical black patch at tornus; cilia with black points from apex to vein 4. Hind wing semihyaline white; the underside with the costal area tinged with ochreous and irrorated with a few black scales, a diffused black patch at base, slight medial patch, and small subapical spot below vein 8.

Hab. Ecuador, Loja; Peru (*Simon*), 1 ♂. *Exp.* 22 millim.

4447. Emarginea niphoplaga. (Plate CXL. fig. 7.)

Emarginea niphoplaga, Druce, A. M. N. H. (8) iii. p. 346 (1909).

♀. Head white; palpi black with white ring at extremity of 2nd joint; sides of frons and antennæ black; tegulæ white edged with black; thorax white tinged with ochreous and mixed with black; the metathoracic crests deep black; pectus and legs black, the mid and hind tibiæ banded with white at extremity, the tarsi ringed with white; abdomen blackish, the basal crest white, the ventral surface whitish irrorated with brown. Fore wing white tinged with green, the medial and postmedial areas suffused with red-brown from costa to submedian fold leaving some ochreous white below costa; an oblique brown and black fascia from base of costa to one third of inner margin; subbasal line represented by a black

striga from costa and short streak below the cell; antemedial line represented by a small black spot on costa and oblique line from cell to inner margin; a rather conical silvery white patch in end of cell from subcostal nervure defined by black at sides and below; an oblique waved black line from lower angle of cell to inner margin; postmedial line arising below costa, black slightly defined by whitish on outer side, minutely dentate, incurved below vein 4; some white points on postmedial part of costa with slight blackish streaks between them; subterminal line only defined by the contrast between the postmedial and terminal areas, excurved at middle and incurved in submedian interspace; a small black spot on termen below vein 7; cilia black at tips. Hind wing white, the base of inner margin slightly tinged with brown; a faint discoidal point and sinuous postmedial line; a black striga on termen at discal fold; the underside with the costal area sparsely irrorated with black and with diffused dark patches at base and middle, the discoidal spot and postmedial line distinct.

Hab. COLOMBIA, type † ♀ in Coll. Druce, San Antonio (*Palmer*), ♂, 1 ♀. *Exp.* 28 millim.

B. (*Cyathissa*). Fore wing with vein 7 from before 10; tibiæ not so strongly fringed with scales.
- *a*. Fore wing with the costal half of medial area suffused with black.
  - a^1. Fore wing suffused in parts with grey-green ..... *percara.*
  - b^1. Fore wing suffused in parts with reddish ochreous... *quadrate.*
- *b*. Fore wing with the patch at middle of costal area slightly defined by black.
  - a^1. Fore wing suffused in parts with reddish ochreous... *ochracea.*
  - b^1. Fore wing suffused in parts with blue-grey ..... *pallida.*

4448. Emarginea percara.

Bryophila percara, Morr. Pr. Bost. Soc. N. H. xvii. p. 213 (1874); Smith, Cat. Noct. N. Am. p. 50.

♂. Head pure white; palpi except at tips, sides of frons and antennæ except basal joint black; thorax white tinged with grey-green, the tegulæ edged with black, the metathoracic crest with paired black patches; pectus and legs black and reddish brown, the fore and mid tibiæ with white patches, the hind tibiæ

Fig. 34.—*Emarginea percara*, ♂. ½.

with white ring at middle and tips, the fore and mid tarsi with the 1st and 3rd joints white, the hind tarsi with the 1st three joints white tinged with rufous; abdomen white suffused with yellowish

and fuscous. Fore wing white suffused with grey-green; a black streak below base of cell extending to costa at base and expanding at extremity; a small subbasal black spot on costa; antemedial line black, oblique, waved, much interrupted, expanding into small spots at costa and inner margin; stigmata absent; an oblique sinuous black medial line from costa to submedian fold, with black suffusion beyond it from costa to median nervure enclosing a four-pointed stellate white mark below costa, with white points above it on costa before the postmedial line, which is black defined by white on outer side, interrupted towards costa, bent outwards below costa, then waved, erect to vein 3, then incurved, with conical black patch beyond it on inner area and white points with black streaks between them on costa; faint traces of a diffused white sinuous subterminal line; some black striæ on termen; cilia chequered black and white. Hind wing semihyaline white with very slight fuscous suffusion and traces of a diffused sinuous postmedial line; the underside with the costal area tinged with brown and irrorated with black and with blackish patches at middle and towards apex, a small black discoidal spot and lunulate postmedial line bent inwards at costa.

Hab. U.S.A., Florida, Texas, 1 ♂, Colorado. *Exp.* 24 millim.

4449. Emarginea quadrate. (Plate CXL. fig. 8.)

Cyathissa quadrate, Smith, Can. Ent. xxxviii. p. 225 (1906).

Head and thorax white mixed with ochreous; palpi black, white at tips; sides of frons and head behind eyes black; antennæ blackish; tegulæ with black streak at middle and black marks behind them; metathorax with paired black patches; pectus and legs black, the tibiæ and tarsi banded with white; abdomen ochreous white irrorated with black. Fore wing creamy white more or less suffused with reddish ochreous especially on basal inner area and on medial area below the cell; a black streak below base of cell, extending to costa at base and expanding at extremity; a subbasal black striga from costa; antemedial line represented by a black spot on costa and oblique line from cell to inner margin above which it is angled outwards; an oblique sinuous black medial line from costa to submedian fold, the area beyond it black to just below cell enclosing a four-pointed stellate whitish mark just below costa with point above it on costa before the postmedial line, which is black defined on outer side by white, bent outwards below costa, then minutely waved, incurved at discal fold and below vein 4, the costa beyond it black with white points on it, a black patch beyond it on inner area; a terminal series of black striæ; cilia chequered black and white. Hind wing white; a slight discoidal point, the area beyond it and the terminal area more or less irrorated with fuscous; a sinuous postmedial line and terminal series of striæ; the underside with the costal area tinged with brown and irrorated

with black and with blackish patches at middle and before apex, the discoidal spot and postmedial line more distinct.

Hab. U.S.A., Arizona, Cochize Co., San Bernardino Ranch, Nogales (*Oslar*), 2 ♂, 2 ♀. *Exp.* 22–24 millim.

4450. Emarginea ochracea. (Plate CXL. fig. 9.)

Cyathissa ochracea, Smith, Can. Ent. xxxviii. p. 225 (1906).

♀. Head and thorax white, the vertex of thorax tinged with ochreous and with some blackish on pro- meso- and metathorax; palpi blackish except at tips; sides of frons blackish; antennæ brown except at base; palpi and legs mixed with black-brown; abdomen white suffused with reddish brown except at base. Fore wing white with some reddish ochreous suffusion on inner area before antemedial line, in and beyond lower angle of cell to postmedial line, beyond the postmedial line from costa to vein 2 above which it extends to termen and on termen at vein 6; a slight black streak below base of cell; subbasal line represented by a black point below costa, the antemedial line by an oblique series of points below costa, on median nervure and above and below vein 1; a curved black bar representing outer edge of orbicular with diffused spot above it on costa and diffused streak from it to the curved line which represents the lower edge of reniform, with streak from it to postmedial line, which is black defined by white on outer side, oblique to vein 4 and slightly angled inwards at discal fold, slightly angled outwards at veins 4, 3, then incurved and slightly waved, a conical blackish patch beyond it on inner area; some black points on termen at the excision below apex; cilia with series of fuscous brown marks at tips. Hind wing white with faint fuscous postmedial line from vein 2 to inner margin and faint fuscous patch on terminal area from vein 2 to tornus; the underside with the costal area slightly tinged with brown, traces of an oblique postmedial line.

Hab. U.S.A., Arizona, Baboquavaria Mts. (*Poling*), 1 ♀ cotype. *Exp.* 22 millim.

4451. Emarginea pallida. (Plate CXL. fig. 10.)

Cyathissa pallida, Smith, J. N.Y. Ent. Soc. x. p. 35 (1902); Dyar, Cat. Lep. N. Am. p. 107.

♀. Head and thorax white; antennæ brown except at base; pro- and metathorax with brown patches; tarsi brownish ringed with white; abdomen white. Fore wing white, the antemedial area tinged with blue-grey below costa and on inner margin, a blue-grey patch in cell between the stigmata and below and beyond the cell to postmedial line, a triangular blue-grey patch on costa beyond the postmedial line and an oblique patch from middle of postmedial line to termen at submedian fold; subbasal line represented by a

black point below costa, the antemedial line by points below costa and above inner margin; the outer edge of orbicular and inner edge of reniform defined by slight blackish lines, the stigmata otherwise undefined; postmedial line black, minutely waved, excurved below costa and at middle, then incurved, the blue-grey extending to its inner side below costa; a blue-grey line on termen at the excision below apex. Hind wing pure white; the underside with curved blackish postmedial line from below costa to vein 4.

Hab. U.S.A., Colorado desert, 1 ♀, California, Walters Station. *Exp.* 24 millim.

Genus **BRYOLYMNIA**, nov.

Type, *B. roma.*

Proboscis fully developed; palpi upturned, slender, the 2nd joint reaching about to middle of frons and moderately fringed with hair, the 3rd moderate; frons with slight rounded prominence with corneous plate below it; eyes large, rounded; antennæ of male ciliated; thorax clothed with hair and scales mixed, the prothorax without crest, the metathorax with decumbent crest; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only and lateral fringes of hair. Fore wing rather narrow, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the small areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or stalked; 8 anastomosing with the cell near base only.

Sect. I. Fore wing of male with brush of long hair on underside from near base of inner area; hind wing with veins 6, 7 stalked.

4452. Bryolymnia floccifera.

Grammophora floccifera, Möschl. Abh. Senck. Ges. xiv. p. 41, f. 7 (1886).

Head white; palpi black except at tips; antennæ black except basal joint; tegulæ orange fulvous; thorax white and emerald-green, the pro- and metathorax with black bands; pectus and legs blackish, fore tibiæ with white patches, the spurs and tarsi ringed with white; abdomen fuscous grey, the basal crest black, the anal tuft rufous,

Fig. 35.—*Bryolymnia floccifera*, ♂. ½.

the ventral surface black. Fore wing emerald-green with patches of white on costa, in and below cell and beyond postmedial and subterminal lines; the costa with wedge-shaped black subbasal, antemedial, medial and postmedial spots followed by a small quadrate

spot; a subbasal black patch below cell; antemedial line represented by small black spots in cell and on vein 1 and a lunule further from base on inner area; stigmata absent; an irregular oblique black patch in and below lower end of cell; postmedial line represented by a black bar beyond cell, then incurved, sinuous and expanding into a triangular spot on inner margin; subterminal line represented by a rather oblique wedge-shaped black patch from costa to vein 5 with white point on costa, its inner edge angled inwards at vein 7, a quadrate patch at middle and an oblique bar to tornus angled inwards on inner margin; some black points on middle of termen and a diffused streak below the quadrate subterminal patch; cilia with black patches above middle and tornus. Hind wing whitish suffused with fuscous, the apical area darker; cilia white tipped with black except towards tornus. Underside of fore wing black with white postmedial bar with some points beyond it and white apical patch, the tuft of hair in male rufous; hind wing with the costal half black, the inner half white with some black irroration on termen, a blackish discoidal spot.

Hab. Jamaica (*Sturridge*, *Rendall*), 2 ♂, Up Park, 1 ♂, Moneague (*Walsingham*), 1 ♀. *Exp.* 22 millim.

Sect. II. Fore wing of male without brush of hair; hind wing with veins 6, 7 from cell.

A. Fore wing with the ground-colour not green.
  a. Head white.
    a^1. Fore wing with the dark postmedial area angled inwards at middle to cell.
      a^2. Fore wing with the medial area pure white, the postmedial area black ..... *roma*.
      b^2. Fore wing with the medial area yellowish white, the postmedial and terminal areas red-brown ... *forreri*.
    b^1. Fore wing with quadrate black patch beyond the cell. *bicon*.
  b. Head black, the vertex with whitish streak ..... *atriceps*.
B. Fore wing with the ground-colour green.
  a. Fore wing with the antemedial line bent inwards in submedian interspace and outwards above inner margin..... *viridimedia*.
  b. Fore wing with the antemedial line bent inwards to inner margin ..... *picturata*.

4453. Bryolymnia roma.

Dacira roma, Druce, A. M. N. H. (6) xiii. p. 361 (1894); id. Biol. Centr.-Amer., Het. ii. p. 493, pl. 95. f. 6.

♂. Head white; palpi except at tips and antennæ black; tegulæ rufous, whitish at middle; patagia rufous at base, black at tips; thorax black, the metathorax rufous and white; pectus and legs black, the tarsal joints with white points; abdomen fuscous brown. Fore wing with the basal area black extending on costa to near middle, its outer edge angled inwards in cell, outwards in submedian fold, then recurved to inner margin near base; medial area

pure white with medial black points on costa and inner margin and a few scales at middle and upper angle of cell; postmedial line black, retracted at vein 7 and between veins 5 and 2 emitting an upcurved tooth to lower angle of cell, a purplish-black band beyond it extending on costa to near apex and narrowing to inner margin,

Fig. 36.—*Bryolymnia roma*, ♂. ½.

with some white points on costa and leaving a pale brown semicircular terminal patch with white striga at tornus; a slight black terminal line. Hind wing pure semihyaline white, the apex tinged with fuscous; the underside with diffused fuscous patches at middle of costal area and apex.

♀. Hind wing with discoidal black point, the apical half of costal area and the termen tinged with fuscous.

Hab. Mexico, Jalapa (*Trujillo*), 3 ♂; Guatemala (*Rodriguez*), 1 ♀, Godman-Salvin Coll. *Exp.* 22–26 millim.

4454. Bryolymnia forreri.

Dacira forreri, Druce, Biol. Centr.-Am., Het. i. p. 309, pl. 28. f. 27 (1889).

♀. Head white; palpi black except at tips; antennæ black except basal joint; tegulæ white tinged with orange; thorax fulvous orange, the outer edge of patagia black; pectus and legs black-brown, the tarsi with slight white rings; abdomen brownish white, dorsally suffused with fuscous except at base. Fore wing with the basal area black, its outer edge angled outwards at subcostal nervure and submedian fold and retracted to inner margin; the medial area yellowish white with antemedial small black spots on median nervure and inner margin and medial triangular spot on costa; postmedial line black, angled outwards at vein 6, inwardly oblique to vein 4, then running inwards to a point at origin of vein 2, then bent outwards and obliquely incurved to inner margin; the terminal area red-brown suffused with black except beyond the postmedial line below costa and on inner area; some white points on costa; two small white spots just before termen below apex and a striga above tornus; cilia white, black at apex, above middle and towards tornus. Hind wing semihyaline white, the apex tinged with fuscous; a slight terminal fuscous line from apex to vein 2 and a slight fuscous line through cilia towards apex; the underside with the costal area irrorated with fuscous and with slight diffused dark patches beyond and before middle.

Ab. 1. Fore wing with the postmedial line less angled outwards at vein 6 and inwards at vein 2.—Costa Rica.

Hab. Mexico, Presidio (*Forrer*), 1 ♀ type, Godman-Salvin Coll.; Costa Rica, La Trinité in Coll. Joannis. *Exp.* 26 millim.

4455. Bryolymnia bicon. (Plate CXL. fig. 11.)

Calymnia bicon, Druce, Biol. Centr.-Am., Het. i. p. 295 (1889).
Dacira ranapa, Schaus, J. N.Y. Ent. Soc. vi. p. 116 (1898).

Head white; palpi except at tips, points at sides of frons, and antennæ black; thorax black, the tegulæ tipped with white, the patagia and metathorax with whitish patches; pectus white; legs black, the extremities of tibiæ and tarsi ringed with white; abdomen pale rufous, ventrally black with whitish patch at middle. Fore wing with the basal area black with small rufous subbasal spot below costa, its outer edge waved and inwardly oblique, forming the antemedial line to vein 1 where it is interrupted and strongly bent outwards with pale rufous before it on inner margin; medial area white tinged with pale rufous in and below end of cell; claviform with its upper edge slightly defined by fuscous at extremity; orbicular a minute elliptical rufous annulus; reniform white, bar-shaped, slightly expanding above and below and tinged with rufous above, a black patch from it to postmedial line between veins 7 and 4; an interrupted oblique sinuous fuscous medial line; postmedial line white defined by small black lunules on inner side, very oblique from costa to vein 6 where it is acutely angled, then nearly erect and minutely waved, the area beyond it pale rufous with blackish patch on costal area extending to subterminal line with white points on the costa; subterminal line represented by slight blackish spots at middle; a terminal series of black striæ; cilia fuscous, pale rufous at apex and with fine white line at base. Hind wing whitish tinged with brown, the terminal area suffused with brown, a slight discoidal lunule; cilia brown at base, white at tips; the underside white, the costal area irrorated with brown, the terminal area suffused with fuscous from apex to vein 3, a black discoidal lunule with brown patch beyond it on costa, and sinuous postmedial line.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂, 1 ♀, Coatepec (*Brooks*), 2 ♂; Brazil, Castro Paraña (*D. Jones*), 1 ♂. *Exp.* 28 millim.

4456. Bryolymnia atriceps, n. sp. (Plate CXL. fig. 12.)

Calymnia oryx, Druce, Biol. Centr.-Am., Het. i. p. 295 (nec Feld.).

♂. Head and thorax black, vertex of head with brownish-white streak, the metathorax with rufous patch; tarsi ringed with white; abdomen whitish suffused with fuscous, the basal crest rufous, the anal tuft pale brown, the ventral surface black. Fore wing with the basal area black; subbasal line represented by a black striga from costa slightly defined on each side by rufous; antemedial line forming the outer edge of the black area to vein 1 and slightly defined by rufous on inner side, oblique towards costa, angled

inwards on median nervure, interrupted and strongly bent outwards above inner margin with rufous before it extending to base; medial area whitish tinged with rufous and slightly with brown; claviform represented by a faint fuscous spot at its extremity; orbicular small, round, white defined by diffused brown and with dark point in centre; reniform white tinged with fuscous above and slightly defined by black on inner side, strongly constricted at middle, and with black patch beyond it between veins 7 and 4 extending to postmedial line; a diffused curved medial line with black spot at costa; postmedial line black, slightly defined by white on outer side with black spot at costa, very oblique to vein 6, then incurved to vein 2, forming small lunules between veins 4 and 2 and a wedge-shaped spot in submedian fold, angled outwards on vein 1; terminal area cupreous red with purplish patch on costa beyond the post-medial line, with white points on it on costa and oblique black bar on its outer edge and a fuscous patch on inner area, very faint traces of a subterminal line excurved below vein 7 and at middle; cilia black-brown except at apex. Hind wing whitish tinged with brown, the apical area darker; a faint discoidal lunule and sinuous postmedial line; cilia with fine white line at base; the underside whitish, the costal area irrorated with brown, the terminal area suffused with fuscous towards apex, a black discoidal lunule with dark bar above it from costa, and crenulate postmedial line.

Hab. Guatemala, Cerro Zunil (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 30 millim.

*4457. Bryolymnia viridimedia. (Plate CXL. fig. 13.)

Bryophila viridimedia, Smith, J. N.Y. Ent. Soc. xiii. p. 188 (1905).

♂. Head black, the vertex pure white; thorax purple-brown, the tips of tegulæ, a slight dorsal streak and the metathoracic crest white; abdomen white tinged with brown. Fore wing with the basal area deep purple-brown except on inner margin which is bright yellow-green, bounded by the black antemedial line which is bent inwards between median nervure and vein 1; medial area bright yellow-green; orbicular and reniform small with white annuli defined by black scales, the former round, the latter figure-of-8-shaped; a deeper green medial shade; a quadrate black patch beyond the reniform, which is black defined by white on outer side, excurved and minutely waved; postmedial area violaceous grey with a deep brown patch on costal area with some white points on costa; terminal area bronze-brown, angled inwards in discal fold; cilia dark brown. Hind wing dirty white, the terminal area tinged with brown; the underside whitish, the costal area irrorated with brown, the apex suffused with brown, a slight discoidal lunule and postmedial line.

Hab. U.S.A., Arizona, Cochise Co. *Exp.* 32 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

*4458. Bryolymnia picturata. (Plate CXL. fig. 14.)

Calymnia picturata, Schaus, Trans. Am. Ent. Soc. xxi. p. 238 (1894).

♀. Head and thorax black mixed with white; antennæ ringed with white; pectus and legs whitish mixed with brown, the tarsi black ringed with white; abdomen white tinged with rufous, ventrally irrorated with brown. Fore wing pale olive-green; the basal area almost entirely suffused with black to the black antemedial line; which is excurved in cell and submedian fold and bent inwards to inner margin; the subbasal line represented by an ochreous striga from costa; medial costal area ochreous; the claviform represented by a small blackish mark at its extremity; orbicular white defined by black, small, irregular; reniform defined by black except above, the upper part yellowish, the lower part white with black spot in centre, very strongly constricted at middle; an olive-brown medial shade irrorated with black and with black spots at costa and inner margin; postmedial line double, black, the inner line strong, expanding at discal fold into a wedge-shaped mark to reniform, the outer line slight, minutely waved, slightly angled outwards at vein 6 and inwards in submedian fold, a blackish patch beyond it on costal area irrorated with white; subterminal line slight, blackish, oblique to vein 7, excurved below vein 7 and at middle and with a blackish bar beyond it between veins 7 and 4; a slight black terminal line; cilia chequered white and black. Hind wing whitish tinged with ochreous brown, the terminal area suffused with fuscous; a slight discoidal striga; a fine black terminal line; cilia white with a blackish line near base; the underside white, the costal and terminal areas irrorated with black especially at apex, a blackish shade from middle of costa, discoidal spot and diffused sinuous postmedial line.

Hab. Mexico, Las Vigas (*Schaus*), type † ♀ in U.S. Nat. Mus. *Exp.* 30 millim.

Genus **GONOSTYGIA**, nov.

Type, *G. agonax*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd moderate, porrect; frons smooth with tuft of hair; eyes moderate, round; antennæ of female ciliated; thorax clothed with hair and scales mixed, the tibiæ fringed with long hair; abdomen with dorsal crest at base only. Fore wing with the apex somewhat produced, the termen excised from below apex to middle and from middle to tornus; veins 3 and 5 from near angle of cell; 6 from below upper angle; 7, 8, 9 stalked; 10, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4459. Gonostygia agonax.

Anarta agonax, Druce, P. Z. S. 1890, p. 515; id. Biol. Centr.-Am., Het. ii. p. 490, pl. 94. f. 22.

♀. Head and thorax fuscous black slightly mixed with grey; tarsi whitish; abdomen fuscous black paler at base. Fore wing

fuscous black slightly mixed with grey; subbasal line represented by brownish-white bars from costa and cell; antemedial line brownish white, erect, minutely waved; orbicular very small, round, white defined by black; reniform white defined by black, rounded above and truncate below; postmedial line black defined on outer side by brownish white, broadly diffused below costa and dentate at middle and vein 1, bent outwards below costa, excurved to vein 5, then oblique and very minutely dentate, some white points beyond it on costa; subterminal line represented by obliquely placed white points on and below costa and a point at vein 4; a series of minute

Fig. 37.—*Gonostygia agonax*, ♀. ½.

white points just before termen; cilia white intersected with black at and below apex and at veins 4, 3. Hind wing black with triangular white patch in, below and beyond lower end of cell; cilia white, black towards apex; the underside with the costal half irrorated with white, a black discoidal spot incompletely defined by white.

Hab. Mexico, Jalapa (*Hoege*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 24 millim.

Genus **ATIMÆA**, nov.

Type, *A. pictura.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head, the 3rd moderate or short, porrect; frons smooth; eyes large, round; antennæ of male minutely serrate and fasciculate; thorax clothed with hair and scales mixed, the prothorax without crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing rather narrow, the costa somewhat excised towards apex which is rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked or from angle; 8 anastomosing with the cell near base only.

A. Fore wing with the crescentic patch on medial area black and greatly expanded at upper extremity ..... *pictura.*
B. Fore wing with the crescentic patch on medial area red-brown and slightly expanded at upper extremity ..... *crescentica.*

4460. Atimæa pictura.

Timæa pictura, Saalm. Lep. Madag. p. 309, f. 240 (1891).

♀. Head, thorax, and abdomen ochreous tinged with rufous; palpi with the 2nd joint dark brown at sides; frons with lateral dark bars; tegulæ with strong medial black line. Fore wing ochreous suffused with rufous and irrorated with dark brown;

subbasal line double, black filled in with whitish, from costa to submedian fold, with short black streak beyond it below the cell; antemedial area suffused with red-brown and with black streak above inner margin; antemedial line double filled in with whitish, angled outwards below costa, oblique from below cell to vein 1 where it is angled outwards, then bent inwards to inner margin; medial area black-brown from subcostal nervure to vein 1; orbicular and reniform rufous defined by yellowish white, the former very narrow and oblique, expanding below and strongly confluent with the latter which is very narrow and angled inwards at middle, forming an irregular U-shaped mark; postmedial line white, indistinct and strongly bent outwards below costa, very oblique to vein 5, then inwardly oblique and minutely waved, some whitish points on black-brown suffusion beyond it on costa; subterminal line represented by a series of whitish striæ with small black-brown spots before them, almost obsolete between veins 6 and 4, excurved below vein 7, then waved; a terminal series of slight brown striæ; cilia yellow mixed with rufous. Hind wing yellow slightly tinged with reddish brown; cilia yellow; the underside yellowish white slightly irrorated with brown, a slight discoidal lunule and indistinct curved postmedial line.

Hab. Madagascar, Betsileo (*Cowan*), 2 ♀. *Exp.* 32 millim.

4461. **Atimæa crescentica**, n. sp.

♂. Head, thorax, and abdomen ochreous tinged with rufous; palpi red-brown at sides; frons with lateral dark bars; antennæ red-brown. Fore wing ochreous tinged with red-brown; traces of a double sinuous subbasal line from costa to submedian fold; antemedial line fine, double filled in with white, obliquely incurved from median nervure to just below vein 1 where it is confluent with the fine double postmedial line filled in with white, bent outwards below costa, then very obliquely curved to the antemedial line below

Fig. 38.—*Atimæa crescentica*, ♂. ½.

vein 1, the area between the lines occupied by a semicircular red-brown patch not reaching costa, its upper edge excised by a semicircular yellowish patch edged with whitish and extending to just below median nervure representing the orbicular and reniform; a diffused brown patch on postmedial part of costa with some pale points on costa; traces of a red-brown subterminal line, excurved at vein 7, then oblique; a fine red-brown terminal line; cilia

yellowish at base, red-brown at tips. Hind wing yellowish white tinged with red-brown; cilia yellowish white; the underside with the costal area tinged with rufous, a slight discoidal lunule.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♂ type. *Exp.* 30 millim.

Genus **LEUCOSIGMA**, nov.

Type. *L. uncifera.*

Proboscis fully developed; palpi upturned, slender, the 2nd joint reaching to vertex of head, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair, the inner spurs long; abdomen with some rough hair at base, but without crests. Fore wing with the apex rectangular, the termen excised from vein 6 to 4 where it is angled, then oblique and crenulate; veins 3 and 5 from near angle of cell; 6, 7 from upper angle; 8, 9, 10 stalked; 11 from cell. Hind wing with the termen slightly excised at discoidal fold; veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

*4462. Leucosigma uncifera.

Leucosigma uncifera, Druce, A. M. N. H. (8) i. p. 302 (1898).

♂. Head and thorax fiery red mixed with some yellow; frons with lateral white spots; basal joint of antennæ white in front; tibiæ and tarsi rufous; abdomen white suffused with red-brown, the anal tuft with fiery red mixed. Fore wing fiery red mixed with yellow, white and some brown, the veins streaked with brown; a subbasal white striga from costa to an irregular white patch in base of cell; antemedial line represented by an oblique brown striga from costa and oblique line from vein 2 near its origin to inner margin, both defined by white on inner side; a crescentic white

Fig. 39.—*Leucosigma uncifera*, ♂. ½.

spot in and below end of cell expanding into white spots at inner extremity and at upper angle of cell, defined by dark brown; an oblique minutely waved brown line from vein 5 just beyond the cell to inner margin; postmedial line brown defined by white on outer side, bent outwards and obsolescent below costa, then dentate, oblique to vein 4, then inwardly oblique, some white points beyond it on costa; a diffused oblique white bar from apex; a terminal series of small white lunules. Hind wing white suffused with red-

brown except on inner area, the veins brown; the termen tinged with fiery red from apex to vein 2; the underside whitish, the costal area suffused and irrorated with fiery red to postmedial line, which is black, curved, dentate, ending at submedian fold; some slight terminal dark lunules from apex to vein 5.

Hab. Peru, Carabaya, La Oroya (*Ockenden*), type † ♂ in Coll. Druce. *Exp.* 26 millim.

Genus **CALYMNIODES**, nov.

Type, *C. basicarnea.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head and moderately scaled, the 3rd short; frons smooth; eyes large, rounded; antennæ of male ciliated; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with slight spreading crest; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing rather narrower, the apex rectangular, the termen not crenulate, oblique towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. 1 Abdomen of male clothed with long woolly hair.

A. Fore wing of male with the basal area clothed with thick woolly hair.

4463. **Calymniodes basicarnea.**

Hadena basicarnea, Wlk. xi. 587 (1857).
Calymnia cirrus, Feld. Reis. Nov. pl. 109. f. 5 (1874).

♂. Head and thorax deep purplish red; antennæ brown, the shaft with white points above towards base; pectus and legs grey-brown, the tarsi ringed with ochreous white; abdomen grey-brown, the anal tuft tinged with ochreous. Fore wing with the basal area thickly clothed with purplish-red hair; antemedial line white, oblique, sinuous, bent outwards above inner margin and confluent with the postmedial line; orbicular a small orange spot defined by

Fig. 40.—*Calymniodes basicarnea*, ♂. ½.

deep red; reniform represented by a slight orange and red bar dilated into a small spot at lower angle of cell; an indistinct oblique dark medial line; postmedial line white, oblique, slightly excurved below costa and discal fold, bent inwards above inner margin to the antemedial line, a band of violaceous grey beyond it except at costa

and inner margin, the veins streaked with grey to the subterminal line; some white points on postmedial part of costa; the terminal area red-brown; subterminal line grey, inwardly oblique from costa to vein 7 where it is angled outwards, angled inwards at discal and submedian folds and with small brown spots before it above and below vein 1; cilia with a fine whitish line at base and greyish line at middle. Hind wing whitish tinged with brown, especially on terminal area; a faint brown discoidal spot; cilia whitish with a brown line through them; the underside white, the costal and terminal areas suffused with red-brown and irrorated with white, a large black-brown discoidal lunule and indistinct sinuous postmedial line.

Hab. Venezuela (*Dyson*), 1 ♂ type; S.E. Peru, S. Domingo. *Exp.* 38 millim.

B. Fore wing of male with the basal area not clothed with woolly hair.
  a. Fore wing with the stigmata not silvery white.
    a^1. Hind wing white, the terminal area more or less suffused with brown.
      a^2. Fore wing with the ante- and postmedial lines not confluent above inner margin ..... *rhodopis.*
      b^2. Fore wing with the ante- and postmedial lines confluent above inner margin.
        a^3. Fore wing with the postmedial line strongly excurved at discal fold.
          a^4. Fore wing deep chestnut-brown, the ante- and postmedial areas suffused with white ..... *leucographa.*
          b^4. Fore wing yellow tinged with rufous ..... *promentoria.*
        b^3. Fore wing with the postmedial line slightly excurved at discal fold ..... *obconica.*
    b^1. Hind wing entirely suffused with brown.
      a^2. Fore wing with the ante- and postmedial lines confluent above inner margin.
        a^3. Fore wing with prominent series of dark brown spots before subterminal line.
          a^4. Fore wing with the ante- and postmedial lines confluent at vein 1 ..... *grandimacula.*
          b^4. Fore wing with the ante- and postmedial lines confluent just above inner margin ..... *oliveata.*
        b^3. Fore wing without prominent series of dark brown spots before subterminal line ..... *mastoides.*
      b^2. Fore wing with the ante- and postmedial lines not confluent above inner margin.
        a^3. Fore wing with the ante- and postmedial lines white ..... *bilineata.*
        b^3. Fore wing with the ante- and postmedial lines ochreous ..... *rufula.*
        c^3. Fore wing with the ante- and postmedial lines dark.
          a^4. Fore wing fulvous yellow ..... *xanthia.*
          b^4. Fore wing ochreous brown ..... *infirma.*
  b. Fore wing with the stigmata silvery white.
    a^1. Fore wing with the orbicular heart-shaped.
      a^2. Fore wing without white subbasal point in cell ... *conchylis.*
      b^2. Fore wing with white subbasal point in cell ..... *acamas.*
    b^1. Fore wing with the orbicular V-shaped ..... *pyrostrota*
    c^1. Fore wing with the orbicular crescentic with a white point above it ..... *turcica.*

4464. Calymniodes rhodopis. (Plate CXL. fig. 15.)

Calymniodes rhodopis, Druce, A. M. N. H. (8) i. p. 300 (1908).

Head and thorax bright rufous mixed with some whitish and black; tegulæ silvery white at base; metathoracic crest black; tarsi black ringed with whitish; abdomen grey-white suffused with brown, the anal tuft with rufous mixed. Fore wing white mixed with rufous and black, the veins of terminal area streaked with black; subbasal line white, waved, from costa to vein 1, a black streak in submedian fold from it to beyond the antemedial line where it represents the claviform; antemedial line white, oblique, angled outwards on subcostal and medial nervures, then sinuous; orbicular orange-red defined by black, round; reniform reddish irrorated with black and defined by black except above, somewhat angled outwards at middle; medial line blackish, diffused, oblique, sinuous, angled outwards to the reniform; postmedial line double, black filled in with white and rufous, broader and filled in with pure white towards costa, oblique from costa to vein 6, excurved to vein 4, then incurved and excurved below submedian fold, some white points beyond it on costa; subterminal line whitish, oblique to vein 7 where it is angled outwards, incurved at discal fold and excurved at middle; the terminal area rather darker; a terminal series of black striæ with white points at the veins; cilia fuscous with whitish lines at base and middle. Hind wing white, the termen suffused with brown from apex to vein 4; a small discoidal spot; a brown line near base of cilia; the underside with the costal and terminal areas irrorated with black and rufous, a black discoidal spot, interrupted postmedial line, and terminal series of striæ.

Hab. S.E. Peru, Oconeque (*Ockenden*), 1 ♂, 1 ♀, Aquilani (*Ockenden*). *Exp.* 38 millim. Type † in Coll. Druce.

4465. Calymniodes leucographa, n. sp. (Plate CXL. fig. 16.)

Head, tegulæ, and patagia bright rufous; thorax deep chestnut-red with some whitish on metathorax; palpi deep fiery red; antennæ dark brown; pectus and legs deep chestnut-red, the tarsi ringed with white; abdomen dark greyish brown, the anal tuft and ventral surface rufous. Fore wing deep chestnut-red, with slight dark irroration and streaks on the veins; subbasal line white, waved, from costa to vein 1; some white suffusion from below costa to submedian fold and yellow irroration on inner area before the antemedial line, which is white, very oblique from costa to above inner margin where it is curved outwards to meet the postmedial line, which is white slightly defined by brown on outer side, very oblique from costa to vein 6, incurved below vein 5 and below submedian fold curved inwards to meet the antemedial line; orbicular small, round, orange defined by fiery red; reniform an indistinct red and yellowish mark with whitish points above and below; some yellowish below costa and beyond lower angle of cell before the

postmedial line, and a narrow white band beyond it with white streaks on the veins from it to the white subterminal line, which is oblique from costa to vein 7, slightly excurved below vein 7 and more strongly at middle, angled inwards in submedian fold; cilia with a fine whitish line at base and blackish line at middle. Hind wing white, the base and inner margin tinged with brown; a brown discoidal spot; a red-brown terminal band, broad at costa, narrowing to a point at submedian fold; cilia rufous at apex, then white with a brown line near base and brownish tips to submedian fold; the underside with the costa and terminal band deep red irrorated with white, some brown irroration below costa and before the terminal band; a black discoidal spot and curved postmedial line from costa to submedian fold.

Hab. S.E. Peru, S. Domingo, 2 ♂, 1 ♀ type, Aquilani, 1 ♀, Quinton. *Exp.* 36 millim.

4466. **Calymniodes promentoria.** (Plate CXL. fig. 17.)

Calymniodes promentoria, Dogn. Ann. Soc. Ent. Belg. li. p. 238 (1907).

♂. Head and thorax bright yellowish rufous; tarsi brown ringed with whitish; abdomen grey-brown, the anal tuft tinged with rufous. Fore wing pale yellow tinged with rufous, the postmedial area with whitish; subbasal line faint, brown, waved, from costa to submedian fold; antemedial line fine, brown defined by white on inner side, very oblique and slightly sinuous, somewhat angled outwards in submedian fold, below vein 1 bent outwards and joining the similar postmedial line, which is very oblique from costa to discal fold, then incurved and below submedian fold curved inwards to the antemedial line; orbicular and reniform represented by faint pale marks; traces of a brown medial line, oblique from costa to reniform, inwardly oblique and waved from lower angle of cell to vein 1; a whitish patch on costa beyond the postmedial line with slight white streaks on veins 8 and 7 from it to the subterminal line, which is white and oblique from costa to vein 7, then slight whitish defined by dark brown spots on inner side, waved, and angled inwards in discal fold to postmedial line; a white line at base of cilia. Hind wing white; a small blackish discoidal spot; a red-brown terminal line from apex to submedian fold; cilia tinged with rufous towards apex; the underside with the costa tinged with rufous, the costal area, and terminal area to vein 3, irrorated with rufous, a black discoidal spot and diffused curved postmedial line indistinct below vein 4.

Hab. Ecuador, Loja, type† ♂ in Coll. Dognin. S.E. Peru, Aquilani (*Ockenden*), 1 ♂, Oconeque (*Ockenden*), 1 ♂. *Exp.* 42 millim.

4467. Calymniodes obconica. (Plate CXL. fig. 18.)

Calymniodes obconica, Druce, A. M. N. H. (8) i. p. 300 (1908).

Head and thorax deep rufous; metathoracic crest greyish; pectus grey suffused with red-brown; tarsi ringed with white; abdomen grey suffused with fuscous, the ventral surface with rufous. Fore wing with the basal, medial and terminal areas deep rufous, the ante- and postmedial areas violaceous grey; subbasal line white, waved, from costa to vein 1; antemedial line white, oblique, straight to vein 1, then bent outwards to join the postmedial line, emitting a minute white streak in submedian fold on outer side; orbicular and reniform very faint, reddish, the former round; a faint oblique blackish medial shade from below costa to inner margin; postmedial line white, oblique to vein 6, excurved to vein 5, then slightly incurved and below submedian fold bent inwards to join the antemedial line, a white patch beyond it on costa with a red-brown spot on it; subterminal line oblique and white from costa to vein 7, giving off white streaks on the veins on the red-brown patch on inner side, then violaceous grey defined on inner side by small red-brown spots, excurved below vein 7 and at middle; a fine whitish line at base of cilia. Hind wing white, the terminal area brown from apex to vein 2; a small brownish discoidal spot; cilia white, brown at apex and with brown line near base from apex to vein 2; the underside with the costal and terminal areas irrorated with brown and rufous, a black discoidal spot and curved sinuous postmedial line.

Hab. S.E. Peru, Oconeque (*Ockenden*), 1 ♂, 1 ♀. *Exp.* 40 millim. Type † in Coll. Druce.

4468. Calymniodes grandimacula. (Plate CXL. fig. 19.)

Agrotis grandimacula, Guen. Noct. i. p. 296, pl. 5. f. 5 (1852).

♂. Head and tegulæ bright rufous; palpi grey-brown; thorax rufous mixed with grey-brown; pectus, legs, and abdomen grey-brown. Fore wing violaceous grey irrorated with brown; the basal costal area suffused with rufous, bounded by the waved white subbasal line from costa to submedian fold; antemedial line white, very oblique from costa to vein 1, where it is curved outwards to meet the postmedial white line slightly defined by brown on outer side, oblique from costa to vein 5, somewhat inwardly oblique to submedian fold, then curved inwards to the antemedial line, the enclosed area deep chestnut-red; a slight white streak from the antemedial line in submedian fold; orbicular and reniform small, fiery red, ill-defined, the former small, the latter an indistinct lunule; some white beyond the postmedial line on costal area; the outer part of postmedial area with rufous patches in the interspaces and two brown marks above inner margin divided by grey streaks on the veins and by white streaks towards costa; subterminal line white and oblique from costa to

vein 7, then grey, excurved below vein 7 and at middle; the terminal area rufous; cilia rufous with a fine grey line at base. Hind wing grey suffused with reddish brown; an indistinct discoidal spot; cilia with a fine white line at base followed by a brown line, the tips grey; the underside grey, the costal area and terminal area to vein 3 irrorated with rufous, a brown discoidal lunule and sinuous postmedial line.

Hab. Brazil, New Fribourg, Rio Janeiro, 1 ♂. *Exp.* 36 millim.

4469. **Calymniodes oliveata**, n. sp. (Plate CXL. fig. 20.)

♂. Head and thorax pale rufous, metathoracic crest blackish; palpi brown in front; antennæ dark brown; pectus, legs, and abdomen dark brown, the tarsi ringed with pale yellow. Fore wing orange-yellow slightly irrorated with black and suffused in parts with red-brown, the inner and terminal areas suffused with dark brown; subbasal line represented by a faint oblique greyish striga from costa; antemedial line grey defined by black on outer side, very oblique from costa to above inner margin where it is curved outwards to meet the postmedial line, which is grey defined by black on inner side, very oblique from costa to vein 5, then slightly incurved and below submedian fold curved inwards to meet the antemedial line; orbicular and reniform orange slightly defined by fuscous, the former elliptical, the latter constricted at middle and angled inwards on median nervure, the extremity of which is streaked with grey; medial line represented by blackish marks below costa and cell and above vein 1; a small black spot followed by white points on costa beyond the postmedial line and some whitish suffusion below costa; subterminal line whitish towards costa, then indistinct, greyish, with three black marks before it below costa divided by white streaks on the veins and black spots in the interspaces below vein 4, the line slightly excurved below vein 7 and at middle; a rather diffused blackish terminal line; cilia with black line at middle on inner half and some black scales near tips on apical half. Hind wing greyish brown, the terminal area darker from apex to vein 2; an indistinct discoidal spot; cilia brownish grey with a dark line near base; the underside whitish thickly irrorated with dark brown, the terminal area suffused with brown, the apical area with rufous, a black discoidal lunule, curved postmedial line and fine terminal line.

Hab. S.E. Peru, S. Domingo, 1 ♂ type. *Exp.* 34 millim.

4470. **Calymniodes mastoides**, n. sp. (Plate CXL. fig. 21.)

Lycophotia grandimacula, Druce, Biol. Centr.-Am., Het. i. p. 287 & ii. p. 484 (nec Guen.).

Head and thorax bright rufous; palpi dark red-brown; antennæ black; pectus, legs, and abdomen dark red-brown, the tarsi ringed with white. Fore wing bright rufous tinged with yellow, the

inner margin and terminal area tinged with brown; a slight sinuous grey subbasal line from costa to submedian fold; antemedial line grey-white, very oblique, sinuous; two black points at angles of cell; a faint sinuous dark line from lower angle of cell to inner margin; postmedial line grey-white, obliquely excurved from costa to vein 5, then slightly incurved and below vein 1 bent inwards to inner margin and running along it to antemedial line; a band of violaceous grey suffusion beyond it and some white points on costa: subterminal line very oblique and white from costa to vein 5, then indistinct, grey, excurved, angled inwards in submedian fold and whitish towards inner margin; a terminal series of minute white points at the extremities of the veins; cilia with slight grey lines at base and middle. Hind wing dark glossy brown; cilia with brown line near base and greyish tips; the underside brown, the costal area tinged with rufous and irrorated with white, some grey suffusion in and beyond cell, a dark discoidal lunule and curved postmedial line.

Ab. 1. Fore wing much deeper chocolate-red.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀, Coatepec (*Brooks*), 1 ♂; Guatemala, Volcan de Atitlan (*Champion*), 1 ♀; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♂; Panama, Chiriqui (*Champion*), 1 ♂, Godman-Salvin Coll., Cana Mines (*Tylecote*), 1 ♂; Trinidad (*Kaye*), 1 ♂; Venezuela, Aroa, 4 ♂, 1 ♀; W. Colombia, San Antonio (*Palmer*), 1 ♂; Peru, S. Domingo (*Ockenden*), 1 ♂. *Exp.* 30–40 millim.

4471. Calymniodes bilineata.

Caradrina bilineata Mssn. Stübel's Reise, p. 142, pl. vi. f. 18 (1890).

♂. Head and thorax deep red-brown, the hairs tipped with greyish; pectus and legs fuscous brown, the tarsi ringed with ochreous; abdomen fuscous brown. Fore wing dark red-brown; antemedial line violaceous white, oblique, straight except that it is

Fig. 41.—*Calymniodes bilineata*, ♂. ½.

slightly angled outwards in submedian fold; orbicular represented by an indistinct round fiery-red spot, the reniform by some red scales; an indistinct blackish slightly curved medial line; postmedial line violaceous white, oblique from costa to discal fold, incurved to submedian fold, then excurved and bent inwards to inner margin, a band of slight violaceous-grey suffusion beyond it

except at costa and inner margin and the veins slightly streaked with white to the subterminal line; some white points on postmedial part of costa; subterminal line inwardly oblique and white from costa to vein 7, then indistinct, greyish, angled outwards at vein 7 and inwards at discal and submedian folds; cilia golden brown with a fine white line at base. Hind wing brown with a cupreous tinge; a faint discoidal lunule and fine white line at base of cilia; the underside dark brown slightly irrorated with white and the costal area with red, a blackish discoidal spot and curved postmedial line.

Hab. Ecuador, Guayaquil; S.E. Peru, S. Domingo, 6000′, 1 ♂. *Exp.* 38 millim.

4472. **Calymniodes rufula.** (Plate CXL. fig. 22.)

Calymniodes rufula, Dogn. Ann. Soc. Ent. Belg. li. p. 238 (1907).

♂. Head, thorax, and abdomen red-brown, the head and tegulæ brighter rufous; tarsi ringed with whitish. Fore wing red-brown; antemedial line greyish ochreous, oblique from costa to above inner margin to which it is bent inwards; orbicular orange, small, elliptical; reniform small, defined by orange, constricted at middle and forming a figure-of-8-shaped mark; an indistinct diffused dark medial shade; postmedial line greyish ochreous, excurved from costa to vein 5, then incurved and excurved below submedian fold; subterminal line greyish ochreous, slightly incurved at submedian fold; cilia with a fine whitish line at base. Hind wing red-brown with a greyish tinge; an indistinct brown discoidal lunule; cilia with a fine whitish line at base; the underside red-brown irrorated with greyish, a dark discoidal lunule, indistinct diffused sinuous postmedial line, and traces of diffused subterminal band.

Hab. Colombia, Micay, type † ♂ in Coll. Dognin, San Antonio (*Palmer*), 1 ♂; S.E. Peru, S. Domingo. *Exp.* 44 millim.

*4473. **Calymniodes xanthia.** (Plate CXL. fig. 23.)

Cosmia xanthea, D. Jones, Trans. Ent. Soc. 1908, p. 164.

♂. Head and thorax fulvous yellow; palpi, sides of frons, and antennæ fuscous; metathorax with fuscous patch; pectus and legs greyish suffused with fuscous, the fore coxæ fulvous, the tarsi slightly ringed with whitish; abdomen greyish fulvous tinged with brown. Fore wing fulvous yellow, the inner margin before antemedial line and the terminal area tinged with brown; a slight subbasal line angled outwards below costa and ending at submedian fold; antemedial line fuscous defined by a few white scales on inner side, slightly excurved below costa, then very oblique; orbicular faintly defined by brown, round; reniform obsolete; a faint oblique medial line with blackish points on the veins; postmedial line fuscous slightly defined by whitish on outer side,

oblique from costa to vein 5, then incurved, excurved in submedian interspace and bent inwards to inner margin; an indistinct whitish subterminal line defined by brownish suffusion on inner side, oblique to vein 6, incurved at middle and below vein 2 and bent outwards to tornus; cilia dark brown with a fine white line at base. Hind wing yellowish white irrorated with brown on the veins and terminal area; a dark discoidal spot; cilia dark brown with a fine white line at base; the underside with the costal area suffused with yellow and slightly irrorated with brown, a black discoidal spot and rather diffused postmedial line excurved from costa to vein 3.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 32 millim.

4474. Calymniodes infirma. (Plate CXL. fig. 24.)

Caradrina infirma, Schaus, Trans. Am. Ent. Soc. xxi. p. 236 (1894).

♀. Head and thorax ochreous-brown, the scales tipped with grey, the vertex of thorax pale rufous; tarsi brown with pale rings; abdomen pale reddish brown. Fore wing pale ochreous brown slightly mixed with grey, the costal area tinged with ochreous except at apex; subbasal line very indistinct, straight, from costa to vein 1; traces of a double, oblique, slightly sinuous antemedial line; orbicular and reniform very small, faintly defined by brown; an indistinct sinuous brown medial line; postmedial line very indistinct, bent outwards below costa and oblique below vein 4; subterminal line indistinct, pale, defined by brownish suffusion on inner side, excurved below vein 7 and at middle; the terminal area rather browner; a fine white line at base of cilia. Hind wing whitish tinged with brown, the veins and terminal area rather darker; a fine white line at base of cilia; the underside whitish, the costal and terminal areas irrorated with brown, the former tinged with ochreous, a small discoidal spot and traces of postmedial line.

Hab. W. Colombia, San Antonio (*Palmer*), 1 ♂, 1 ♀; Brazil, Castro Paraña (*D. Jones*), 1 ♀. *Exp.* 36 millim.

4475. Calymniodes conchylis. (Plate CXL. fig. 25.)

Celæna conchylis, Guen. Noct. i. p. 223 (1852).

Head and tegulæ fiery red mixed with orange; palpi and antennæ red-brown, the latter with the basal joint white: thorax red-brown; abdomen greyish suffused with red-brown. Fore wing glossy red-brown slightly irrorated with black except on terminal area, the postmedial area with a greyish gloss; a slight streak of fiery scales below base of costa; antemedial line very indistinct, oblique; claviform represented by an oblique pure white striga with some fiery scales before and beyond it; orbicular pure white, heart-shaped, its apex towards base on the antemedial line; reniform pure white, trilobate, with small fiery-red discoidal lunule

on it with yellowish centre; an oblique black somewhat sinuous medial line from lower angle of cell to inner margin; postmedial line black, erect from costa to vein 6 where it is angled outwards, then dentate and somewhat oblique, very near the subterminal line which is formed of small indistinct red lunules, obsolete towards costa; a series of very indistinct reddish marks just before termen. Hind wing white, the inner margin tinged with red-brown, the terminal area suffused with red-brown, in female wholly tinged with brown; a faint discoidal point and fine postmedial line; the underside ochreous white, the costal and terminal areas irrorated with brown, a black discoidal lunule and sinuous postmedial line.

Hab. Venezuela, Aroa, 1 ♀; Brazil, Organ Mts., Tijuca (*Wagner*), 1 ♀, Rio Janeiro (*Wilson*), 2 ♂. *Exp.* 26–32 millim.

4476. **Calymniodes acamas.** (Plate CXL. fig. 26.)

Noctua acamas, Herr.-Schäff. Aussereur. Schmett. f. 566 (1869); Druce, A. M. N. H. (8) iii. p. 459 (1909).

Head fiery red with some rufous on vertex; palpi rufous; antennæ brown with the basal joint white; thorax rufous, the tegulæ with fiery-red and yellow patches at base, the dorsum with red and yellow stripe; tarsi ringed with white; abdomen rufous. Fore wing rufous, the base and costal area to beyond middle suffused with fiery red and yellowish; subbasal line represented by a yellow striga from costa with white point beyond it in cell; antemedial line indistinct, dark, defined on inner side by yellow except towards costa, oblique, sinuous; claviform represented by an oblique white mark at upper extremity defined by black above; orbicular pure white, elliptical, its outer edge somewhat excised; reniform pure white interrupted at middle by an oblique blood-red mark, oblique, expanding and rather bilobed above, with white point beyond its lower extremity; an indistinct oblique black line from lower angle of cell to inner margin; postmedial line black, bent outwards and obsolescent below costa, then oblique, minutely dentate and produced to black points on the veins, some slight yellow points beyond it on costa; subterminal line yellowish defined on inner side by brown, slightly excurved below vein 7 and incurved at discal fold, then minutely waved; a slight black terminal line with white points at the veins. Hind wing cupreous red-brown with blackish discoidal spot; the underside rather whiter, the costal area and terminal area to vein 3 irrorated with red-brown, a black discoidal spot and sinuous postmedial line.

Hab. Venezuela; S.E. Peru, Oconeque, La Oroya (*Ockenden*), 3 ♂, Quinton, S. Domingo (*Ockenden*), 1 ♀. *Exp.* 28–32 millim.

*4477. **Calymniodes pyrostrota.** (Plate CXL. fig. 27.)

Calymniodes pyrostrota, Dogn. Ann. Soc. Ent. Belg. li. p. 237 (1907).

♀. Head and thorax fiery red, the patagia and metathoracic

crest red-brown; palpi red-brown except at tips; pectus and legs red-brown, the tarsi ringed with white; abdomen red-brown, the anal tuft and ventral surface rufous. Fore wing fiery red suffused in parts with red-brown, especially on medial area except towards costa and in submedian fold and on terminal area; subbasal line indistinct, yellow, from costa to submedian fold; antemedial line indistinct, double, filled in with yellow towards costa, oblique, minutely waved; claviform represented by an oblique silvery-white streak on its upper edge, the orbicular by an oblique silvery-white Y-shaped mark just beyond antemedial line; reniform yellow and red with oblique silvery-white bar on its inner edge and slight oblique line on outer with minute point below it; a blackish medial line, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line double, black filled in with greyish and with red at costa, strongly bent outwards below costa, then minutely waved, oblique to vein 6, then inwardly oblique; the veins of terminal area with slight dark streaks; subterminal line represented by a series of reddish striæ slightly defined by brown on inner side and somewhat bent inwards at vein 2; a fine red-brown terminal line; cilia red-brown with slight punctiform pale line at base. Hind wing greyish tinged with brown, the terminal area darker; an indistinct discoidal spot and diffused sinuous postmedial line; cilia pale red-brown with a fine dark line near base; the underside pale tinged with brown, the costal and terminal areas irrorated with red-brown, a dark discoidal lunule, sinuous postmedial line, and indistinct diffused subterminal line.

Hab. S.E. Peru, Carabaya, S. Domingo (*Ockenden*), 1 ♂, 1 ♀. *Exp.* 32 millim. Type † ♀ in Coll. Dognin.

*4478. Calymniodes turcica. (Plate CXL. fig. 28.)

Calymniodes turcica, Druce, A. M. N. H. (8) i. p. 301 (1908).

Head and thorax whitish tinged with red-brown and mixed with rufous; tarsi red-brown ringed with white; abdomen pale rufous. Fore wing silky greyish suffused with red-brown; some blackish marks at base; subbasal line represented by diffused black spots below costa and cell; antemedial line indistinctly double, oblique, minutely waved, interrupted, angled inwards at vein 1; claviform represented by an oblique white striga defined by black at its extremity; orbicular represented by a silvery-white crescent with white point above it, both defined by black; the reniform with two oblique white striæ on inner side, a yellowish bar at middle with white striga beyond it and white point at lower extremity, all defined by black, some blackish suffusion before and beyond it; medial line diffused, blackish, oblique from costa to reniform, inwardly oblique from lower angle of cell to inner margin; postmedial line double, black filled in with grey, the outer line indistinct, bent outwards below costa, then minutely dentate, incurved below vein 5, some white points beyond it on costa; subterminal line with an oblique grey bar from costa, then very indistinct and with black spot at inner margin; a terminal

series of black striæ with whitish points between them. Hind wing red-brown with blackish discoidal bar; cilia with a fine whitish line at base; the underside grey tinged with red-brown, the costal and terminal areas irrorated with red-brown, a black discoidal spot, curved maculate postmedial line, diffused subterminal band, and terminal series of black striæ.

Hab. S.E. Peru, S. Domingo (*Ockenden*), type † in Coll. Druce. *Exp.* 30 millim.

Sect. II. Male without secondary sexual characters.

A. Fore wing with the orbicular and reniform not filled in with black.
  a. Fore wing with the orbicular not white.
    a^1. Fore wing with the medial area whitish tinged with rufous.
      a^2. Fore wing with the antemedial line strongly incurved from costa to above inner margin ..... *orbica*.
      b^2. Fore wing with the antemedial line nearly straight from costa to above inner margin.
        a^3. Fore wing with the reniform oblique ..... *latifascia*.
        b^3. Fore wing with the reniform erect ..... *mesochroa*.
    b^1. Fore wing with the medial area whitish or pale more or less suffused with brown.
      a^2. Fore wing with the reniform erect ..... *albiorbis*.
      b^2. Fore wing with the reniform oblique.
        a^3. Fore wing with the antemedial line oblique, waved.
          a^4. Fore wing with the basal area white except towards costa ..... *ampliplaga*.
          a^4. Fore wing with the basal area brown.
            a^5. Fore wing with the medial area whitish ..... *nævia*.
            b^5. Fore wing with the medial area hardly paler than the ground-colour ..... *melagona*.
        b^3. Fore wing with the antemedial line angled outwards below costa and inwards at vein 1 ..... *aperiens*.
    c^1. Fore wing with the costal half of medial area yellow . *parta*.
  b. Fore wing with the orbicular pure white.
    a^1. Fore wing with the reniform defined by white points on inner edge ..... *dislocata*.
    b^1. Fore wing with the reniform with white annulus angled inwards on median nervure to orbicular ..... *retracta*.
B. Fore wing with the orbicular and reniform filled in with black ..... *fuscoma*.

4479. **Calymniodes orbica**, n. sp. (Plate CXL. fig. 29.)

Hadena latifascia, Druce, Biol. Centr.-Am., Het. i. p. 294 (part. nec Wlk.).

Head fuscous brown; tegulæ rufous; thorax ochreous tinged with rufous, the extremities of patagia dark brown; tibiæ and tarsi blackish ringed with white; abdomen greyish suffused with fuscous brown, the anal tuft rufous. Fore wing with the basal area rufous; an oblique waved black subbasal line defined by ochreous on inner side from costa to submedian fold, with a greyish fuscous patch beyond it to antemedial line, which is double, the inner line black, the outer rufous, filled in with ochreous, incurved from costa to median nervure, then very oblique to middle of inner margin; medial area ochreous tinged with rufous; claviform

represented by a dark point at its extremity; orbicular white slightly defined by rufous and with dark point in centre, round; reniform very narrow and oblique, curved, concave towards base, slightly defined by rufous and its centre by rufous; an obliquely curved rufous medial shade, diffused on inner side; postmedial line double filled in with rufous, the inner line black, the outer fuscous, very minutely sinuous, oblique from costa to vein 6 and inwardly oblique below vein 2, the area beyond it fuscous with a greyish tinge and with some ochreous points on costa; subterminal line represented by a series of ochreous lunules defined on inner side by slight dentate black marks and expanding into diffused patches at apex and tornus, slightly angled outwards at veins 7, 6, 4, 3; a fine black terminal line with white points at the extremities of the veins. Hind wing pale suffused with brown, the terminal area darker, a slight blackish discoidal lunule; cilia whitish with a brown line through them; the underside whitish, the costal and terminal areas irrorated with brown, a black discoidal lunule, sinuous postmedial line expanding into spots below costa and at discal and submedian folds, diffused subterminal band from costa to vein 4, and terminal series of slight lunules.

Hab. Guatemala, Cerro Zunil (*Champion*), 1 ♂ type; Panama, Chiriqui (*Champion*), 1 ♀, Godman-Salvin Coll.; Venezuela, Aroa, 1 ♂, 1 ♀. *Exp.* 28–30 millim.

4480. Calymniodes latifascia.

Hadena latifascia, Wlk. xxxiii. 730 (1865); Druce, Biol. Centr.-Am., Het. i. p. 294.
Calymnia oryx, Feld. Reis. Nov. pl. 109. f. 35 (1874).

Head and thorax dark reddish brown, the metathorax more rufous; abdomen dark brown, the anal tuft and ventral surface greyish. Fore wing fuscous brown with a greyish tinge, the medial area ochreous suffused with rufous; subbasal line represented by small black marks below costa and cell; antemedial

Fig. 42.—*Calymniodes latifascia*, ♂. ½.

line double, black filled in with rufous, slightly sinuous; claviform represented by a black point at its extremity; orbicular small, round, pale ochreous slightly defined by brown and with dark point in centre; reniform very narrow and oblique, pale ochreous slightly defined by brown, its centre very narrow and defined by rufous, some brown suffusion in cell before it; an indistinct medial line,

oblique from costa to median nervure, then waved; postmedial line double, the outer line indistinct, minutely waved, very oblique from costa to vein 6 where it is acutely angled outwards, then bent inwards to lower extremity of reniform and oblique to inner margin near tornus, some black suffusion before it beyond the reniform, some pale points beyond it on costa; subterminal line represented by a diffused dentate black mark below costa with some rufous beyond it, then by a series of minute black points in the interspaces; cilia with a fine pale line at base. Hind wing brown with a reddish gloss, somewhat paler at base; cilia with a fine whitish line at base; the underside whitish irrorated with fuscous, the terminal area suffused with fuscous, a large black discoidal spot and sinuous postmedial line with dark spots below costa and at discal and submedian folds.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♀, Coatepec (*Brooks*), 1 ♀, Vera Paz (*Champion*), 1 ♀, Godman-Salvin Coll.; Venezuela (*Dyson*), 1 ♀ type. *Exp.* 30–34 millim. The type has the abdomen of a ♂ stuck on.

4481. **Calymniodes mesochroa**, n. sp. (Plate CXL. fig. 30.)

Hadena latifascia, Druce, Biol. Centr.-Am., Het. i. p. 294 (part. nec Wlk.).

♂. Head and thorax bright rufous, palpi whitish in front; tarsi with slight pale rings; abdomen pale rufous. Fore wing red-brown suffused with greyish, the medial area ochreous white tinged with rufous; subbasal line represented by two slight dark points on costa; antemedial line erect, very slightly sinuous; claviform represented by a black point at its extremity; orbicular with very indistinct brown annulus, round; reniform very narrow, with brown centre and whitish annulus faintly defined by brown; medial line blackish diffused and slightly waved towards costa, then indistinct, brown; a black line inwardly oblique from costa to reniform, then forming the outer edge of reniform, then incurved from lower angle of cell to inner margin, the fuscous postmedial line approximated to it except beyond cell where it is excurved and minutely dentate, slightly defined by whitish on inner side, some whitish points beyond it on costa; subterminal line very indistinct, whitish defined on inner side by slight blackish marks except towards costa, very minutely angled outwards at veins 7, 4, 3; a terminal series of black points. Hind wing red-brown somewhat paler at base; cilia red-brown at base, white at tips; the underside pale suffused with rufous, a dark discoidal point, slight punctiform postmedial line, and fine dark terminal line.

Hab. Panama, Bugaba (*Champion*), 1 ♂ type. *Exp.* 22 millim.

4482. **Calymniodes albiorbis.** (Plate CXL. fig. 31.)

Calymniodes albiorbis, Druce, A. M. N. H. (8) i. p. 301 (1908).

Head yellowish with some brown on vertex and at sides of palpi; antennæ brown; thorax dark red-brown, the tegulæ whitish at

tips; pectus whitish; tarsi with pale rings; abdomen red-brown, whitish at base, the anal tuft yellowish tinged with rufous. Fore wing dark red-brown, the medial area whitish tinged with yellowish and rufous; subbasal line represented by a slight pale striga from costa; antemedial line blackish defined by whitish on outer side, angled outwards at subcostal nervure and submedian fold and incurved at vein 1; claviform very small, white defined at extremity by black; orbicular pure white with two faint dark spots in centre, oblique, elliptical; reniform with white annulus, its centre yellowish at middle, dark brown above and below, narrow, angled inwards on median nervure to the orbicular, a black-brown patch between them in cell with another above it on costa; traces of an incurved brown line from lower angle of cell to inner margin where it expands into a patch; postmedial line black slightly defined on outer side by whitish, bent outwards below costa, then minutely dentate, incurved below vein 5, some whitish points beyond it on costa; subterminal line indistinct, pale, slightly excurved below vein 7 and at middle; a slight dark terminal line; cilia greyish mixed with brown, a dark line near base. Hind wing whitish tinged with brown especially on terminal area; a dark discoidal spot; cilia whitish mixed with brown, a dark line near base; the underside with the costal and terminal areas irrorated and suffused with brown, a black discoidal spot and rather diffused postmedial line incurved below vein 3.

Ab. 1. Fore wing with the medial area nearly pure white, the markings almost obsolete.

Hab. S.E. Peru, S. Domingo (*Ockenden*), 1 ♂, Oconeque. *Exp.* 20–24 millim. Type † in Coll. Druce.

4483. **Calymniodes ampliplaga.** (Plate CXL. fig. 32.)

Celæna ampliplaga, Wlk. xv. 1687 (1858).

♂. Head and tegulæ ochreous mixed with red-brown; thorax greyer; pectus and legs pale rufous, fore and mid tibiæ with fuscous bands, the tarsi fuscous with pale rings; abdomen grey-brown. Fore wing pale red-brown with slight fuscous suffusion on terminal area, the basal and medial areas except at costa and the antemedial area below the cell grey-white; subbasal line represented by two black striæ from costa; antemedial line double towards costa, oblique, waved, with some blackish before it in cell; orbicular very faintly define, odblique elliptical; reniform indistinctly defined, with fuscous centre; medial line represented by an oblique black striga from costa; postmedial line black defined by whitish on outer side with fuscous suffusion beyond it, very slightly angled outwards below costa, oblique to vein 5, then incurved, some white points with black streaks between them beyond it on costa; the veins of terminal area slightly streaked with black; an oblique white shade from apex; subterminal line indistinct, pale, slightly defined on each side by fuscous, excurved at veins 7, 6 and at middle; cilia chequered fuscous and grey with

white line at base. Hind wing greyish suffused with brown; cilia white with a brown line through them; the underside pale rufous.

Hab. Haiti (*Tweedie*), 1 ♂ type. *Exp.* 30 millim.

4484. Calymniodes nævia. (Plate CXLI. fig. 1.)

Celæna nævia, Guen. Noct. i. p. 223 (1852).
Hadena latifascia, Druce, Biol. Centr.-Am., Het. i. p. 294 (part. nec Wlk.).

Head and thorax dark red-brown, the palpi blackish, the metathorax rufous and ochreous; pectus greyish; tarsi black ringed with white; abdomen greyish suffused with red-brown. Fore wing dark reddish brown with a greyish gloss, the medial area grey irrorated with brown; subbasal line double filled in with rufous, angled outwards below costa and ending at submedian fold in which there is a black streak from it to the antemedial line, which is double filled in with rufous, slightly sinuous and incurved from costa to above inner margin where it is bent outwards; claviform represented by a brown point at its extremity; orbicular with brown centre and whitish annulus defined by brown, round; reniform very narrow and oblique, whitish defined by brown, its centre defined by brown and constricted at middle; an indistinct waved medial line, oblique from costa to lower angle of cell; a black streak in discal fold from the reniform to the postmedial line, which is minutely dentate, very oblique from costa to vein 6 where it is angled, then nearly erect, some pale points beyond it on costa; subterminal line very indistinct, pale, defined on inner side by small dentate black marks below costa, then by some small black spots, somewhat excurved below vein 7 and at middle; a fine black terminal line; cilia with fine pale line at base. Hind wing pale suffused with reddish brown, the terminal area rather darker; cilia white with slight brown line through them; the underside grey-white, the costal and terminal areas irrorated with dark brown, a large black discoidal spot and sinuous postmedial line with blackish spots at discal and submedian folds.

Hab. Mexico, Jalapa (*Trujillo*, *Schaus*), 3 ♂, Coatepec (*Brooks*), 1 ♂; Guatemala, Volcan de Atitlan (*Champion*), 1 ♂, Duenas (*Champion*), 1 ♀, Godman-Salvin Coll.; S.E. Peru, S. Domingo; Brazil, Rio Janeiro (*Wilson*), 1 ♂. *Exp.* 28–34 millim.

4485. Calymniodes melagona, n. sp. (Plate CXLI. fig. 2.)

Hadena latifascia, Druce, Biol. Centr.-Am., Het. i. p. 294 (part. nec Wlk.).

Head and thorax dark red-brown mixed with blackish, the metathorax ochreous tinged with rufous; tarsi black ringed with white; abdomen fuscous brown. Fore wing pale red-brown, the basal and terminal areas suffused with fuscous, the medial area irrorated with dark brown; subbasal line indistinct, double, waved, from costa to submedian fold in which there is a black streak from it to the antemedial line, which is double filled in with rufous, slightly

waved, oblique; claviform slightly defined by blackish above towards extremity; orbicular small, round, with fuscous centre and pale annulus defined by brown; reniform very narrow and oblique, somewhat constricted at middle, with whitish annulus defined by black and brown centre with whitish striga on it; an indistinct minutely waved medial black line, oblique from costa to lower angle of cell; a black streak in discal fold from the reniform to the postmedial line, which is double, the outer line indistinct, minutely waved, very oblique from costa to vein 6 where it is acutely angled, then incurved, some pale points beyond it on costa; faint traces of a diffused rufous subterminal line, defined on inner side by a wedge-shaped black mark below costa, then by some black points; a terminal series of slight dark striæ with minute whitish points at extremity of the veins. Hind wing pale red-brown, the terminal area rather darker; a slight dark discoidal lunule; cilia white with a brown line near base; the underside grey-white irrorated with brown, a large black discoidal spot and sinuous postmedial line with blackish spots below costa and at discal and submedian folds.

Hab. Mexico, Jalapa (*Trujillo*), 3 ♂, 1 ♀, type, Coatepec (*Brooks*), 1 ♀; Guatemala, Volcan de Atitlan (*Champion*), 1 ♂; Costa Rica, Candelaria Mts. (*Underwood*), 1 ♂, Godman-Salvin Coll. *Exp.* 28–30 millim.

4486. Calymniodes aperiens. (Plate CXLI. fig. 3.)

Hadena aperiens, Wlk. xi. 755 (1857); Druce, Biol. Centr.-Am., Het. i. p. 294 & ii. p. 487.

Head reddish brown, the vertex and palpi at sides suffused with fuscous; thorax fuscous black with reddish-ochreous patch on metathorax; pectus and legs fuscous brown, the tarsi ringed with whitish; abdomen pale fuscous brown. Fore wing with the basal area fuscous with some rufous on inner margin, the medial area rufous slightly irrorated with black; the terminal area fuscous; subbasal line represented by slight double dark striæ from costa and cell filled in with rufous; antemedial line double filled in with rufous, angled outwards below costa, inwardly oblique to vein 1 and bent outwards above inner margin; claviform narrow and elongate, slightly defined by blackish at extremity only; orbicular defined by black and with fuscous centre, small, round; reniform very narrow and oblique, defined by black, its centre very narrow, defined by brown and with blackish spot at lower extremity; a rather indistinct medial line, oblique and waved from costa to median nervure, then dentate; postmedial line double filled in with rufous, minutely waved, oblique from costa to vein 6, then almost erect, some slight pale points beyond it on costa; subterminal line rufous, waved, rather diffused and expanding into patches at apex and tornus, defined on inner side by a slight wedge-shaped black mark below costa and slightly angled outwards at veins 7 and 4;

a terminal series of black points defined on inner side by slight rufous lunules; a fine pale line at base of cilia. Hind wing white, the veins and costal and terminal areas suffused with brown, the last narrowing to tornus; a small discoidal spot; cilia white with a brown line through them; the underside with the costal and terminal areas irrorated with brown, a diffused fuscous mark at middle of costa, black discoidal spot, faint sinuous postmedial line with dark spots below costa and at discal and submedian folds, and terminal series of striæ.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂; Guatemala, Volcan de Atitlan (*Champion*), 1 ♂, Godman-Salvin Coll.; Venezuela (*Dyson*), 1 ♂, 1 ♀ type. *Exp.* 24–30 millim.

4487. **Calymniodes parta.** (Plate CXLI. fig. 4.)

Perigea parta, Schaus, Trans. Am. Ent. Soc. xxi. p. 230 (1894).

♀. Head ochreous, the palpi brown at sides; thorax bright rufous, the tegulæ tipped with white; tarsi ringed with white; abdomen red-brown mixed with greyish. Fore wing bright rufous, the medial part of vein 1 irrorated with black and white; subbasal line represented by double blackish striæ from costa and cell; antemedial line almost medial, indistinct, double, oblique from costa to submedian fold, then incurved; the medial area orange-yellow irrorated with red from costa to submedian fold; claviform small, slightly defined by brown; orbicular and reniform with whitish annuli defined by brown, the former round, the latter somewhat constricted at middle and with black points in upper and lower parts; a brown medial line excurved from below costa to below cell, then oblique; postmedial line double filled in with whitish towards costa, bent outwards below costa, excurved to vein 5, then incurved, some white points beyond it on costa; subterminal line yellowish, excurved below vein 7 and at middle and bent outwards to tornus; a fine whitish line at base of cilia. Hind wing fuscous brown with a reddish tinge, greyish towards base; cilia ochreous white with a brown line through them; the underside grey-white very thickly irrorated with brown, a black discoidal spot and indistinct diffused postmedial line.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♀. *Exp.* 22 millim.

4488. **Calymniodes dislocata.** (Plate CXLI. fig. 5.)

Celæna dislocata, Wlk. x. 266 (1856).

♀. Head and thorax red-brown with a few white scales mixed, basal joint of antennæ white at extremity, tegulæ tipped with white; tarsi ringed with white; abdomen greyish brown. Fore wing red-brown with some yellow mixed especially on basal area;

subbasal line brown, waved, from costa to submedian fold; antemedial line double, minutely waved, erect; orbicular pure white defined by a few black scales, somewhat oblique elliptical; reniform very indistinctly defined, narrow and constricted at middle, with some white points on its inner edge; postmedial line defined by yellow on each side at costa, strongly bent outwards below costa, then double, minutely waved and produced to black and grey points on the veins, incurved below vein 4, some slight fuscous suffusion beyond it except towards costa and inner margin and some white points on costa; subterminal line formed of small yellow spots defined by brown on inner side, angled inwards at discal and submedian folds, outwards below vein 7 and excurved at middle; the veins of terminal area with slight dark streaks; a slight dark terminal line with white points at the veins. Hind wing whitish tinged with red-brown, the terminal area suffused with red-brown; cilia with white line at base, followed by a brown line and white and brown tips; the underside white irrorated with large red-brown scales except below the cell, a large blackish discoidal spot and diffused waved postmedial line from costa to vein 4.

Hab. Venezuela (*Dyson*), 1 ♀ type. *Exp.* 26 millim.

4489. **Calymniodes retracta**, n. sp. (Plate CXLI. fig. 6.)

♀. Head and thorax dark reddish brown; palpi with the 2nd and 3rd joints whitish at tips; tegulæ and prothoracic crest whitish at tips; pectus, legs, and abdomen greyish suffused with red-brown. Fore wing dark reddish brown, the medial area and a patch on inner margin before antemedial line yellowish tinged with rufous; subbasal line represented by slight blackish marks below costa and cell; antemedial line blackish, angled inwards in cell and on vein 1 and outwards in submedian fold; claviform minute with pure white centre defined by black, acute at extremity; orbicular pure white, small, oblique elliptical; reniform with blackish centre and white annulus, narrow, constricted at middle and angled inwards on median nervure to the orbicular, the cell between them blackish, a dark mark above them on costa; postmedial line blackish, bent outwards below costa, then minutely waved, incurved below vein 4, some white points beyond it on costa; subterminal line yellowish, angled outwards at vein 7 and excurved at middle; a blackish terminal line with minute white points at the veins and a blackish line at base of cilia. Hind wing grey-brown; cilia whitish with dark line near base and some dark scales at tips; the underside greyish suffused and irrorated with brown, a dark discoidal spot and diffused postmedial line excurved below costa.

Hab. Peru, Tinguri (*Ockenden*), 1 ♀ type. *Exp.* 22 millim.

4490. **Calymniodes fuscoma.** (Plate CXLI. fig. 7.)

Oligia fuscoma, Schaus, Pr. U.S. Nat. Mus. xxx. p. 102 (1906).

♀. Head yellow; palpi blackish at sides; frons with lateral black bars; thorax rufous, the base of tegulæ yellow followed by a black line; tarsi slightly ringed with white; abdomen red-brown, the anal tuft pale rufous. Fore wing with the basal and terminal areas ochreous tinged with brown, the medial and postmedial areas rufous irrorated with yellow; subbasal line represented by an oblique brown striga from costa; antemedial line defined by yellow on inner side, angled outwards below costa and above inner margin; orbicular and reniform with black centres and fiery-orange annuli; the former very small, elliptical, the latter small, rounded above and narrowing below, with some greyish before and beyond it; a slight fiery-orange streak in submedian fold before the postmedial line, which is broadly defined by yellow on outer side, strongly bent outwards below costa and slightly incurved below vein 5, some small yellow spots defined by brown beyond it on the veins and some small yellow spots on costa with yellow streak below them; subterminal line yellowish, slightly excurved at middle and bent outwards to tornus; a terminal series of slight brown points; cilia rufous. Hind wing pale red-brown; cilia whitish with a pale rufous line through them; the underside whitish, the costal and terminal areas irrorated with rufous, a blackish discoidal lunule and rather diffused curved postmedial line.

Hab. Costa Rica, Irazu (*Rogers*), 1 ♀, Godman-Salvin Coll. Brazil, São Paulo, in Coll. D. Jones. *Exp.* 24 millim.

Genus **IPIMORPHA.**

	Type.
Ipimorpha, Hübn. Verz. p. 238 (1827)	*retusa.*
Plastenis, Boisd. Ind. Meth. p. 93 (1840)	*subtusa.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching to middle of frons and moderately fringed with hair in front, the 3rd short; frons smooth, with tuft of hair; eyes large, round; antennæ of male laminate and ciliated; thorax clothed with hair and hair-like scales, the tegulæ produced to a dorsal ridge, the prothorax with sharp triangular crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with some rough hair at base and lateral fringes of hair, but without crests. Fore wing with the costa arched at base, then almost straight, the apex produced and acute, the termen typically excised below apex, then excurved, not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. (*Ipimorpha*). Fore wing with the termen excised below apex, then excurved.

4491. Ipimorpha retusa.

Noctua retusa, Linn. Faun. Suec. p. 321 (1761); Esp. Schmett. iv. pl. 178. f. 1; Hübn. Eur. Schmett., Noct. f. 214; Dup. Lép. Fr. vi. p. 145, pl. 82. f. 3; Frr. Beitr. iii. pl. 143; Staud. Cat. Lep. pal. p. 205.
Noctua vetula, Hübn. Beitr. pl. 2, H (1791).
Noctua gracilis, Haw. Lep. Brit. p. 268 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 57.
Cosmia curvata, Butl. Trans. Ent. Soc. 1886, p. 131.

Head and thorax reddish brown slightly mixed with grey; pectus with some whitish; abdomen grey-brown, the ventral surface greyer. Fore wing reddish brown tinged with grey and with slight dark irroration, the costal area irrorated with whitish;

Fig. 43.—*Ipimorpha retusa*, ♂. ½.

subbasal line whitish, oblique, from costa to vein 1; antemedial line whitish defined by a brown shade on outer side, angled outwards below costa, then oblique, slightly excurved at submedian fold; orbicular and reniform very large, dark brown with whitish annuli, the former elliptical and slightly constricted at middle, the latter strongly constricted at middle; a rather diffused oblique sinuous brown line from lower angle of cell to inner margin; postmedial line whitish slightly defined by brown on inner side and strongly on outer, arising from costa towards apex, oblique, slightly sinuous; subterminal line slight, pale, defined by dark brown on outer side, minutely waved, oblique from costa to vein 5, excurved at middle and angled inwards in submedian fold; a slight brown terminal line; cilia with a slight brown line at middle. Hind wing glossy grey-brown; cilia brownish white with a slight brown line near base; the underside whitish tinged and irrorated with brown, a small brown discoidal spot, obliquely curved postmedial line and rather diffused subterminal line from costa to termen at submedian fold.

Ab. 1. *curvata*. Fore wing somewhat redder.—Japan.

Hab. Britain, Leech Coll.; France, Sand and Leech Colls.; Germany, Zeller and Leech Colls.; Austria, Leech Coll.; Hungary; Switzerland, Frey Coll.; N. Italy; S. Russia, Leech Coll.; W. Siberia, Altai; E. Siberia, Amurland, Ussuri; Japan, Yesso (*Pryer*), 3 ♂, Fukushima (*Lewis*), 1 ♀ type *curvata*, Yokohama (*Pryer*), 2 ♀. *Exp.* 36–34 millim.

Larva. Meyr. Brit. Lep. p. 118; Barrett, Lep. Brit. v. p. 330, pl. 226. f. 1. Pale green; broad dorsal, slender subdorsal and waved spiracular whitish lines; head yellow-green or black-brown. Food-plants: *Salix*, Poplar, Birch, between leaves spun together. 5–6.

Sect. II. Fore wing with the termen nearly straight from apex to vein 3, then oblique.

A. Hind wing of male with vein 2 arising from towards base of cell and with semihyaline streaks above and below it.
  a. Fore wing with the postmedial line hardly bent inwards to costa, the claviform and orbicular large ..... *pleonectusa*.
  b. Fore wing with the postmedial line strongly curved inwards to costa.
    a^1. Fore wing grey-brown; hind wing suffused with brown, the claviform and orbicular small ..... *subvexa*.
    b^1. Fore wing ochreous white; hind wing slightly tinged with brown, the orbicular large ..... *nanaimo*.

4492. Ipimorpha pleonectusa.

Ipimorpha pleonectusa, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 191 (1873); Smith, Cat. Noct. N. Am. p. 212.
Calymnia æquilinea, Smith, Bull. Brooklyn Ent. Soc. v. p. 67 (1882).

Head and thorax red-brown tinged with greyish; pectus whitish; abdomen yellowish white dorsally tinged with red-brown. Fore wing yellowish suffused with red-brown, the costal edges pale yellow; subbasal line yellowish, from costa to submedian fold;

Fig. 44.—*Ipimorpha pleonectusa*, ♂. ½.

antemedial line pale yellow, very oblique, straight; claviform large, red-brown defined by pale yellow; orbicular and reniform large, red-brown defined by pale yellow, the former elliptical, the latter constricted at middle and slightly angled inwards on median nervure; a diffused red-brown shade from lower angle of cell to inner margin; postmedial line pale yellow, almost straight; subterminal line indistinct, yellowish white defined on inner side by a slight red-brown shade, excurved below costa and at middle and ending at tornus; a terminal series of faint red-brown lunules; cilia with a slight yellowish line at base. Hind wing pale yellowish suffused with reddish brown; cilia yellowish white; the underside

yellowish white faintly tinged with red-brown, a faint curved postmedial line.

Ab. 1. Paler and less red.—Manitoba, Alberta.

Hab. Canada, Renfrew Co., 7 ♂, Manitoba, Winnipeg, 2 ♂, Alberta, Calgary (*Wolley-Dod*), 1 ♂, 4 ♀; U.S.A., Massachusetts, New York, Evans Center, 2 ♂ type, New Jersey, Utah, Colorado. *Exp.* 24–40 millim.

Larva. Dyar, Pr. U.S. Nat. Mus. xxvii. p. 874 (1904).

Head rounded, disk-like, yellowish white, white on face which is edged by a heavy semicircular black band, jaws and sutures of mouth black; body flattened ventrally, somite 12 not enlarged; translucent green; a broad dorsal white band on somites 3 to 13, narrowing in front; thoracic shield green, not cornified; narrow subdorsal and substigmatal white lines; legs tipped with black; tubercles small, pale, white with dark hair points, iv. at the lower corner of spiracles which are white edged with black; skin shagreened. Food-plant: Aspen, living in a dwelling formed of the leaves with a hole at the lower end.

4493. Ipimorpha subvexa. (Plate CXLI. fig. 8.)

Ipimorpha subvexa, Grote, Can. Ent. viii. p. 189 (1876); Smith, Cat. Noct. N. Am. p. 212.

♂. Head, thorax, and abdomen reddish brown mixed with grey; antennæ with the basal joint white, the shaft ringed with whitish; pectus mixed with whitish; abdomen with the anal tuft tinged with rufous, the ventral surface whitish. Fore wing grey thickly irrorated with olive-brown; subbasal line whitish, slightly angled inwards on median nervure and ending at submedian fold; antemedial line brown defined by pale yellow on inner side, oblique and slightly excurved at median nervure; claviform very small, brown slightly defined by whitish; orbicular and reniform brown defined by whitish, the former small, elliptical, the latter large and constricted at middle; a slight brown medial shade from lower angle of cell to inner margin; postmedial line brown defined by pale yellow on outer side, obliquely curved from costa to discal fold, then straight, oblique; subterminal line indistinct, whitish, defined on inner side by olive-brown suffusion, excurved below vein 7 and at middle, angled inwards at discal and submedian folds and bent outwards to tornus; a terminal series of small brown lunules; cilia brown with slight pale line at base and whitish tips. Hind wing whitish suffused with brown except on costal area; cilia ochreous white with a brown line through them; the underside ochreous white, the costal area irrorated with brown, a brown postmedial line from costa to discal fold.

Hab. U.S.A., Texas (*Belfrage*), 1 ♂ type, Colorado. *Exp.* 42 millim.

*4494. Ipimorpha nanaimo. (Plate CXLI. fig. 9.)

Ipimorpha nanaimo, Barnes, Can. Ent. xxxvii. p. 196 (1905).

♂. Head, thorax, and abdomen ochreous white slightly tinged with brown. Fore wing ochreous white tinged with brown; antemedial line dark, oblique, slightly incurved at middle; orbicular and reniform large, faintly defined, elliptical, the former produced to a slight point on outer side, the latter on inner side; an oblique dark shade from lower angle of cell to inner margin; postmedial line dark, slightly excurved; subterminal lime only defined by the terminal area being somewhat paler and slightly irrorated with black, excurved below vein 7 and at middle; costa and cilia towards apex reddish. Hind wing whitish faintly tinged with brown; a diffused dark postmedial line.

Hab. Canada, Br. Columbia, Victoria. *Exp.* 39 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

B. (*Plastenis*). Hind wing of male normal.

4495. Ipimorpha subtusa.

Noctua subtusa, Schiff. Wien. Verz. p. 88 (1776); Fabr. Mant. Ins. ii. p. 152 (1787); Hübn. Eur. Schmett., Noct. f. 213; Dup. Lép. Fr. vi. p. 148, pl. 82. f. 4; Frr. Beitr. i. pl. 10; Steph. Ill. Brit. Ent., Haust. iii. p. 56; Staud. Cat. Lep. pal. p. 205.

Head and thorax grey mixed with brown; antennæ whitish; pectus whitish; abdomen grey suffused with brown, the ventral surface whitish. Fore wing glossy grey suffused and irrorated with reddish brown, the medial area rather greyer; subbasal line yellowish white, from costa to submedian fold; antemedial line brown defined by yellowish white on inner side, very oblique, straight; claviform moderate, reddish brown defined by yellowish white; orbicular and reniform large, reddish brown defined by

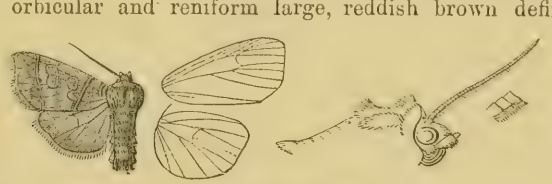


Fig. 45.—*Ipimorpha subtusa*, ♂. ½.

yellowish white, the former elliptical, the latter constricted at middle; a brown medial shade from costa to reniform and slightly incurved from lower angle of cell to inner margin; postmedial line brown defined by yellowish white on inner side, slightly excurved below costa and somewhat oblique below vein 4; subterminal line very faint, whitish defined on inner side by a red-brown shade, angled outwards at vein 7 and inwards at discal fold, excurved at middle and incurved below 3; cilia reddish brown with a darker

line at middle. Hind wing grey suffused with reddish brown; a faint discoidal lunule; cilia white tinged with ochreous at base; the underside white, the costal area irrorated with brown; a brown discoidal lunule filled in with white, curved postmedial line and subterminal brown spot below vein 2.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria, Leech Coll.; Hungary; Switzerland; N. Italy; Russia, Livonia, Zeller Coll., Sarepta; Armenia; W. Siberia, Altai; E. Siberia, Ussuri. *Exp.* 34–38 millim.

Larva. Meyr. Brit. Lep. p. 118; Barrett, Lep. Brit. v. p. 328, pl. 225. f. 3.

Pale yellowish green; rather broad dorsal and narrow subdorsal pale yellow or whitish lines; spiracular line pale yellow; head yellow marked with black. Food-plants: Poplar and Aspen, between leaves spun together. 4–5.

Genus **MERISTIS**.

	Type.
Meristis, Hübn. Verz, p. 239 (1827)	*trigrammica*.
Grammesia, Steph. Ill. Brit. Ent., Haust. ii. p. 151 (1829)	*trigrammica*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and broadly scaled, the 3rd short, upturned; frons smooth; eyes large, round; antennæ of male serrate; thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base and lateral fringes of hair but without crests. Fore wing rather broad, the apex rectangular, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell, 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4496. **Meristis trigrammica.**

Noctua trigrammica, Hüfn. Berl. Mag. iii. p. 408 (1767); Esp. Schmett. iv. pl. 123. f. 6; Staud. Cat. Lep. pal. p. 195.
Noctua trilinea, Schiff. Wien. Verz. p. 84 (1776); Hübn. Eur. Schmett., Noct. f. 216; Dup. Lép. Fr. vii. p. 103, pl. 107. f. 2; Steph. Ill. Brit. Ent., Haust. ii. p. 152.
Noctua quercus, Fabr. Spec. Ins. ii. p. 214 (1781).
Noctua notacula, Fabr. Mant. Ins. ii. p. 138 (1787).
Phalæna quercicola, Gmel. Ed. Syst. Nat. 1, 5, p. 2535 (1788).
Noctua bilinea, Hübn. Eur. Schmett., Noct. f. 217 (1802); Steph. Ill. Brit. Ent., Haust. ii. p. 152; Herr.-Schäff. Eur. Schmett., Noct. f. 398.
Grammesia obscura, Tutt, Brit. Noct. i. p. 142 (1891).
Grammesia fringsii, Schultz, Soc. Ent. xiii. p. 153 (1899).

Head and thorax ochreous white mixed with rufous; palpi brown at sides; abdomen whitish ochreous. Fore wing whitish ochreous irrorated with rufous; subbasal line brown, slightly waved, from costa to vein 1; antemedial line fine, brown, slightly bent inwards to costa and incurved above vein 1; medial line stronger, slightly angled outwards below costa and oblique below vein 1; postmedial line fine, brown, slightly angled outwards below costa and incurved below vein 4; a fine waved brown terminal line; cilia reddish

brown. Hind wing whitish ochreous suffused with brown except on costal area; cilia whitish at tips; the underside with the costal area irrorated with brown, a discoidal point, slight bar from middle of costa, and subterminal line from costa to vein 6.

Fig. 46.—*Meristis trigrammica*, ♂. ½.

Ab. 1. *bilinea*. Fore wing suffused with brown, the medial line hardly traceable.

Ab. 2. *fringsi*. Fore wing with the ante- and postmedial lines absent, the medial line present.

Hab. Britain, Leech Coll.; France; Holland, Zeller Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria, Frey Coll.; Hungary; Switzerland; Italy; Dalmatia, Leech Coll.; Balkan States; S. Scandinavia; Russia, Livonia; Armenia; Asia Minor, Pontus. *Exp.* 32–40 millim.

Larva. Meyr. Brit. Lep. p. 123; Barrett, Lep. Brit. v. p. 297, pl. 222. f. 1.

Greyish ochreous, dull reddish brown or dark grey; dorsal line pale, black-edged at excisions; subdorsal line pale, interrupted, sometimes edged with blackish marks above; spiracular line brown; head brown. Food-plant: *Plantago*, subterranean in habit. 7–4.

Genus **TRICHOCOSMIA**.

	Type.
Trichocosmia, Grote, Can. Ent. xv. p. 6 (1883)	*inornata*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint not reaching middle of frons and moderately fringed with scales in front, the 3rd short; frons with slight rounded prominence with corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed, the prothorax without crest, the metathorax with spreading crest; tibiæ slightly fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

4497. Trichocosmia inornata.

Trichocosmia inornata, Grote, Can. Ent. xv. p. 6 (1883); Smith, Cat. Noct. N. Am. p. 210.

Head and thorax white tinged with rufous; abdomen white, the basal crest tipped with rufous. Fore wing white tinged with rufous; antemedial line indistinct, rufous, slightly defined by whitish on inner side, erect, waved, with minute black points on

median nervure and vein 1; a small fuscous spot at lower angle of cell; a faint diffused sinuous rufous medial line; postmedial line indistinct, rufous, slightly defined by white on outer side, very minutely waved and with minute dark points on the veins, slightly excurved from costa to vein 4, then oblique; subterminal line

Fig. 47.—*Trichocosmia inornata*, ♂. ½.

indistinct, white slightly defined by rufous on inner side and somewhat excurved below vein 7 and at middle; a terminal series of slight dark points. Hind wing pure white; the underside with the apex faintly tinged with rufous.

Ab. 1. Fore wing without the dark spot at lower angle of cell and points on the veins.

Hab. U.S.A., Arizona, 1 ♂, Phœnix (*Kunzé*), 19 ♂, 10 ♀. *Exp.* 24–28 millim.

Genus **BAGISARA**.

	Type.
Bagisara, Wlk. xv. 1770 (1858).....	*subusta*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head and slender, the 3rd moderate; frons smooth; eyes large, round; antennæ of male laminate and moderately ciliated; thorax clothed almost entirely with scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Fore wing with the termen somewhat excised below apex and towards tornus and excurved at middle.

4498. **Bagisara subusta.**

Aletlimia subusta, Hübn. Samml. Exot. Schmett. ii. p. 8, ff. 205-6 (1827); Druce, Biol. Centr.-Am., Het. i. p. 290; Smith, Cat. Noct. N. Am. p. 213.
Aletlimia inusta, Guen. Noct. ii. p. 12, pl. 8. f. 1 (1852); Smith, Cat. Noct. N. Am. p. 214.
Anthophila erecta, Wlk. xii. 828 (1857).
Anomis dispartita, Wlk. xiii. 990 (1857).
Poaphila congesta, Wlk. xv. 1838 (1858).
Bagisara incidens, Wlk. xv. 1771 (1858).
Laphygma trilinea, Wlk. xxxii. 649 (1865).

Head and thorax pale ochreous yellow; tarsi tinged with brown; abdomen pale yellow dorsally tinged with fulvous. Fore wing pale glossy ochreous yellow irrorated with pale brown; the 1st line almost medial, brown defined by whitish on inner side, angled outwards below costa, then oblique and slightly incurved; two

black discoidal points; postmedial line brown defined by whitish on outer side, excurved from costa to vein 5, then incurved; subterminal line brown defined by whitish on outer side, excurved below costa, then slightly incurved; a terminal series of black

Fig. 48.—*Bagisara subusta*, ♂. ½.

points; cilia tinged with rufous. Hind wing semihyaline yellowish white, the termen tinged with ochreous; a terminal series of black points; the underside with the costa and termen slightly tinged with rufous and irrorated with brown, a small dark discoidal spot and postmedial series of minute points on the veins.

Ab. 1. *inusta*. Fore wing much more strongly irrorated with brown.

Ab. 2. *incidens*. Fore wing with round blackish discoidal spot instead of the two points.

Hab. U.S.A., Florida, Texas; Mexico, Vera Cruz (*H. H. Smith*), 1 ♂, Guerrero (*H. H. Smith*), 1 ♂, 2 ♀, Coatepec (*Brooks*), 1 ♂, Orizaba (*Trujillo*), 1 ♀, Cuesta de Misantla (*Trujillo*), 1 ♀, Jalapa (*Trujillo*), 1 ♀, Presidio (*Forrer*), 1 ♀; Guatemala, San Geronimo (*Champion*), 5 ♂, 1 ♀, Zapota (*Champion*), 1 ♀, Vera Paz (*Champion*), 1 ♀; Costa Rica, Irazu (*Rogers*), 2 ♂, 3 ♀; Panama, Chiriqui (*Champion, Ribbé*), 3 ♀, Godman-Salvin Coll.; Jamaica (*Gosse, Bowry, Cockerell, Kaye*), 1 ♂, 4 ♀ types *dispartita* and *incidens*, Moneague (*Walsingham*), 1 ♂; Cuba, Santiago (*Schaus*), 1 ♂, 1 ♀; Haiti (*Tweedie*), 2 ♂, 1 ♀ types *erecta* and *trilinea*; St. Lucia (*Cowie*), 1 ♀; Grenada (*H. H. Smith*), 2 ♀; Barbados (*Frampton*), 3 ♂, 3 ♀; Venezuela (*Dyson*), 1 ♂ type *congesta*; Br. Guiana, Potaro R. (*Kaye*), 1 ♀; Brazil, Espiritu Santo (*Higgins*) 1 ♂, 1 ♀, São Paulo (*Jones*), 2 ♀; Paraguay, Sapucay (*Foster*), 8 ♂, 8 ♀; Argentina, Goya (*Perrins*), 3 ♀. *Exp.* 26 millim.

Sect. II. Fore wing with the termen evenly curved.

A. Fore wing with the reniform not represented by two small white spots defined by black.
  a. Fore wing with the postmedial line excurved below costa.
    a^1. Fore wing with the lines white.
      a^2. Fore wing grey-brown ..... *obscura*.
      b^2. Fore wing ochreous white ..... *rectifascia*.
    b^1. Fore wing with the lines dark ..... *paulensis*.
  b. Fore wing with the postmedial line angled outwards at vein 6.
    a^1. Fore wing yellowish white ..... *buxea*.
    b^1. Fore wing creamy ochreous slightly irrorated with brown ..... *delicia*.
B. Fore wing with the reniform represented by two small white spots defined by black ..... *patula*.

4499. Bagisara obscura, n. sp. (Plate CXLI. fig. 10.)

♀. Head and thorax grey suffused with reddish brown; palpi fuscous, whitish at tips; antennæ fuscous; tarsi fuscous ringed with whitish; abdomen grey-brown. Fore wing grey suffused with reddish brown and slightly irrorated with black; subbasal whitish striæ from costa and cell with some blackish scales on their outer edges; antemedial line whitish defined on each side by fuscous, very obliquely excurved; orbicular a faint minute whitish spot; reniform with whitish annulus, very narrow and constricted at middle; a slightly oblique curved medial blackish line; postmedial line whitish defined on each side by fuscous, bent outwards below costa and incurved below discal fold, some faint whitish points beyond it on costa; subterminal line slight, pale, somewhat excurved below vein 7 and at middle, the terminal area darker with slight pale striæ just before termen and fine pale line at base of cilia. Hind wing greyish suffused with brown, the cilia whitish with fine pale lines near base and tips; the underside grey irrorated with brown, a blackish discoidal striga and indistinct minutely waved postmedial line.

Hab. Br. Guiana (*Rodway*), 1 ♀ type. *Exp.* 24 millim.

4500. Bagisara rectifascia. (Plate CXLI. fig. 11.)

Schinia rectifascia, Grote, Proc. Bost. Soc. N. H. xvi. p. 242 (1874); Smith, Cat. Noct. N. Am. p. 214.

♀. Head, thorax, and abdomen ochreous white irrorated with brown. Fore wing ochreous white suffused with pale yellow-brown except on costal area and irrorated with brown; the 1st line almost medial, white, angled outwards below costa, then oblique; a slight whitish discoidal bar; postmedial line white, excurved below costa, then oblique; subterminal line white, excurved below costa, then erect and ending at tornus; the terminal area tinged with rufous, with slight diffused whitish streaks on the veins; terminal black points on veins 3, 2; cilia rufous with fine red line at base. Hind wing ochreous white, the costa towards apex and termen slightly irrorated with brown; cilia tinged with rufous; the underside with the costal half and terminal area irrorated with red-brown, a slight discoidal lunule and curved postmedial line from costa to submedian fold.

Hab. U.S.A., Pennsylvania, 1 ♀ type, New Jersey, Illinois, Alabama. *Exp.* 34 millim.

4501. Bagisara paulensis. (Plate CXLI. fig. 12.)

Atethmia paulensis, Schaus, J. N.Y. Ent. Soc. vi. p. 116 (1898).

♀. Head and thorax ochreous white; palpi at sides and antennæ brownish; legs irrorated with fuscous; abdomen fulvous yellow with slight fuscous irroration, the 1st segment ochreous white. Fore wing ochreous yellow slightly irrorated with red-brown, the

terminal area tinged with rufous; the 1st line almost medial, brown, oblique from costa to subcostal nervure, then nearly straight and almost erect; postmedial line brown, excurved from costa to vein 6, then incurved; subterminal line brown, excurved from costa to vein 6, then almost straight and ending at tornus; cilia red-brown with a slight yellow line at base. Hind wing pale yellow, the termen faintly tinged with rufous; the underside with the costal area slightly irrorated with brown, the termen tinged with brown from apex to vein 2, a postmedial series of dark points on the veins from costa to vein 2 and a series of slight points just before termen from apex to submedian fold.

Hab. Colombia, 1 ♂; S. Brazil, São Paulo. *Exp.* 36 millim.

4502. Bagisara buxea.

Schinia buxea, Grote, Can. Ent. xiii. p. 230 (1881); id. Papilio, ii. p. 64, pl. 1. f. 4; Smith, Cat. Noct. N. Am. p. 213.

Head and thorax white tinged with ochreous; palpi tinged with rufous at tips; antennæ pale rufous; abdomen ochreous white with slight orange segmental lines. Fore wing yellowish white slightly tinged with rufous except at base, rather more strongly tinged on terminal area; the 1st line almost medial, fine, rufous, angled outwards on subcostal nervure, then oblique; a slight rufous discoidal line; postmedial line fine, rufous, oblique from

Fig. 49.—*Bagisara buxea*, ♂. ½.

costa to vein 6 where it is acutely angled outwards, then inwardly oblique and slightly incurved at submedian fold; subterminal line fine, rufous, excurved below vein 7, then oblique and slightly excurved at middle; cilia bright rufous. Hind wing yellowish white, the terminal area faintly tinged with rufous from apex to vein 2; cilia white; the underside white with the costal area faintly tinged with ochreous.

Hab. U.S.A., Texas, Kerrville, 1 ♂, Arizona, Prescott (*Kunzé*), 1 ♂, 2 ♀, Huachuca Mts. (*Barnes*), 2 ♂, 2 ♀. *Exp.* 30–34 millim.

*4503. Bagisara delicia. (Plate CXLI. fig. 13.)

Trileuca delicia, Dyar, J. N.Y. Ent. Soc. xv. p. 52 (1907).

♂. Head, thorax, and abdomen creamy ochreous. Fore wing creamy ochreous with slight brown irroration; the lines fine,

brown; the 1st line almost medial, angled outwards on subcostal nervure, then oblique; postmedial line oblique from costa to vein 6 where it is angled outwards, then inwardly oblique and slightly excurved towards inner margin; subterminal line angled outwards below vein 7, then oblique and slightly excurved at middle; the terminal area and cilia more tinged with brown. Hind wing white, the termen tinged with yellow from apex to vein 2.

Hab. U.S.A., Wisconsin, Milwaukee Co. *Exp.* 32 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

4504. Bagisara patula.

Xanthia patula, Druce, Biol. Centr.-Am., Het. ii. p. 486, pl. 94. f. 14 (1898).

♂. Head and thorax orange mixed with red scales; antennæ brownish except at base; patagia with oblique fuscous line across them; the metathorax with blackish dorsal streak; pectus and legs pinkish white mixed with rufous; abdomen pale pinkish brown, the ventral surface whitish suffused with rufous. Fore wing bright golden yellow irrorated with red, the veins streaked with rufous; subbasal line red-brown, oblique, from costa to median nervure; antemedial line red-brown, oblique from costa to submedian fold, then inwardly oblique; orbicular represented by a black point, the reniform by an oblique white striga at upper angle of cell and pear-shaped spot at lower angle, both defined by black; a very oblique red-brown line from costa well beyond middle to middle of inner margin, touching lower extremity of reniform and followed by another oblique red-brown line, excurved from costa to vein 3, then incurved and again excurved below submedian fold; a faint subterminal shade excurved below costa and at middle and incurved at discal and submedian folds; cilia red-brown with white tips. Hind wing orange-yellow tinged with pinkish especially at inner margin; cilia red-brown with slight pale line at base and white tips; the underside ochreous, the costal area irrorated with brown and white, a small black discoidal spot, medial line excurved below costa and obsolescent on inner area, and slight curved postmedial line with minute black streaks on the veins.

Hab. Costa Rica, Sta. Clara Valley (*Zurcher*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 32 millim.

Genus **ELYDNA**.

	Type.
Elydna, Wlk. xv. 1712 (1858)	*transversa.*
Dyrzela, Wlk. xv. 1758 (1858)	*plagiata.*
Dadica, Moore, P. Z. S. 1881, p. 349	*lineosa.*
Radinacra, Butl. A. M. N. H. (5) i. p. 161 (1878)	*cinerascens.*
Leucocosmia, Butl. Trans. Ent. Soc. 1886, p. 394	*reclusa.*
Floccifera, Hmpsn. Moths Ind. ii. p. 281 (1894)	*erigida.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of

head, slender, the 3rd long; frons smooth; eyes large, round; antennæ of male typically ciliated; thorax clothed almost entirely with scales and without crests; tibiæ fringed with long hair; abdomen smoothly scaled and without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars or rather stronger from well below middle; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with long branches to just beyond middle, the apical part ciliated.

4505. Elydna bosca.

Dyrzela bosca, Swinh. Trans. Ent. Soc. 1890, p. 266; Hmpsn. Moths Ind. ii. p. 267.

♂. Head and thorax pale reddish brown, the scales tipped with greyish; tarsi ringed with whitish; abdomen grey tinged with reddish brown. Fore wing reddish brown tinged with grey and slightly irrorated with fuscous; antemedial line indistinct, double, obliquely curved and very slightly waved; an indistinct medial line, oblique from costa to just below cell, then erect; postmedial

Fig. 50.—*Elydna bosca*, ♂. ¾.

line indistinct, double, excurved to vein 6, incurved at discal fold, then oblique and very slightly waved, an oblique black spot beyond it between veins 7 and 6; traces of a minutely waved subterminal line excurved below vein 7 and at middle; a series of prominent black points just before termen; cilia fuscous. Hind wing fuscous brown, the cilia with a fine pale line at base; the underside grey tinged with reddish brown.

Hab. Burma, Rangoon, 1 ♂ type, Bhamo, 1 ♂; Borneo, Sarawak (*Wallace*), 1 ♂. *Exp.* 34 millim.

Sect. II. (*Dyrzela*). Antennæ of male strongly serrate above to middle, strongly fasciculate below.

4506. Elydna plagiata.

Dyrzela plagiata, Wlk. xv. 1758 (1858); Hmpsn. Moths Ind. ii. p. 267.
Oglasa costipannosa, Swinh. Trans. Ent. Soc. 1890, p. 266.
Oglasa costiplaga, Swinh. Trans. Ent. Soc. 1891, p. 153.

Head and thorax chocolate-brown, the vertex of head whitish;

antennæ blackish; palpi in front towards base white; pectus greyish; abdomen reddish brown, the ventral surface whitish except at extremity. Fore wing reddish brown suffused with glossy leaden grey; a large chocolate-red patch from costa at middle to near apex and extending to below vein 4, with rather sinuous white edges and rounded below; a subbasal black point in cell; two indistinct oblique sinuous dark antemedial lines, wide apart below the cell; postmedial line indistinct, dark, curving

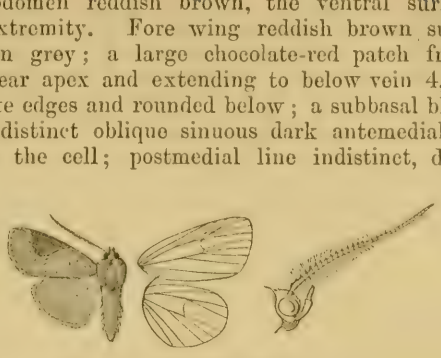


Fig. 51.—*Elydna plagiata*, ♂. ½.

round the outer edge of the chocolate patch and minutely waved from its lower edge to inner margin; a series of black points just before termen. Hind wing dark brown with a cupreous red gloss; a fine pale line at base of cilia; the underside greyish suffused with brown, a black discoidal lunule, indistinct curved postmedial line, and terminal series of black points.

Hab. Punjab (*James*), 1 ♂; Bombay, Kanara, Karwar (*Bell*), 1 ♀; Ceylon, Kandy (*Green*), 1 ♂, 1 ♀, Matale (*Pole*), 1 ♀; Burma, Moulmein (*Clerk*), 1 ♂ type, Rangoon, 1 ♂ type *costipannosa*, Bhamo, 1 ♂. *Exp.* 30 millim.

Sect. III. Antennæ of male minutely serrate and strongly fasciculate.

4507. Elydna incrassata.

Dyrzela incrassata, Wlk. xv. 1759 (1858).
Dyrzela parallela, Wlk. xxxiii. 787 (1865).

Palpi, frons, and antennæ black-brown; vertex of head and basal half of tegulæ orange-fulvous; tips of tegulæ and thorax red-brown; pectus, legs, and abdomen greyish brown. Fore wing

Fig. 52.—*Elydna incrassata*, ♂. ½.

red-brown with a greyish gloss, the costal edge orange fulvous to beyond middle; a black point in base of cell; antemedial line red-brown, oblique, waved; medial line red-brown, waved, oblique

from costa to median nervure; postmedial line red-brown, slightly bent outwards below costa, then minutely waved and oblique to inner margin near tornus; a chocolate-brown patch beyond it from costa to above vein 6, with some white points on costa, its lower part black with the patch constricted above it; a faint sinuous dark subterminal shade between veins 5 and 3; a series of black points just before termen. Hind wing dark brown with a reddish gloss; a fine pale line at base of cilia; the underside greyer with blackish discoidal lunule and curved postmedial line from costa to vein 2.

Hab. Singapore (*Ridley*), 10 ♂, 3 ♀; Borneo, Sarawak (*Wallace*), 5 ♂, 1 ♀, Kuching (*Shelford*), 1 ♂, Sandakan (*Creagh*), 1 ♀. *Exp.* 26–32 millim.

Sect. IV. Antennæ of male ciliated.

A. Palpi of male with the terminal part of 2nd joint and the 3rd joint fringed with hair in front, the second joint with small tuft of hair behind at extremity, the tegulæ produced behind into a hood over thorax, the fore coxæ on outer side and femora above fringed with thick tufts of scales.

4508. Elydna tristicta.

Caradrina tristicta, Hmpsn. Trans. Ent. Soc. 1898, p. 246, pl. 17. f. 2.
Xanthodes amorata, Barnes, Can. Ent. xxxix. p. 66 (1907)

♂. Head and thorax white tinged with reddish yellow and irrorated with a few black scales; palpi yellow at sides; antennæ rufous; fore legs with the fringes of scales bright rufous; abdomen ochreous white with reddish orange dorsal segmental bands. Fore wing white, the basal area suffused with rufous, the medial area suffused with rufous and yellow except towards inner margin, the terminal area suffused with rufous between veins 6 and 5, the

Fig. 53.—*Elydna tristicta*, ♂. ½.

basal area with some black irroration, the rest of wing irrorated with rufous, the veins streaked with rufous; subbasal line represented by a black striga from costa and a point on median nervure, the antemedial line by a diffused blackish band from costa to vein 1, sometimes broken up into two spots; medial line rufous, erect and slightly sinuous; small white spots in the angles of cell and another beyond the rufous discoidal line; veins 6 and 5 strongly streaked with rufous; postmedial line rufous, oblique from costa to vein 6 where it is angled, then inwardly oblique and

slightly incurved between veins 3 and submedian fold; subterminal line fine, rufous, oblique from costa to vein 6 then inwardly oblique and slightly incurved between veins 3 and 2; a series of small black spots just before termen from apex to submedian fold; cilia rufous except towards tornus. Hind wing yellowish white with series of small red brown lunules from apex to vein 2 and the cilia red-brown at tips between those points; the underside with the costal area and terminal area to vein 3 sparsely irrorated with black, a small black discoidal spot and indistinct curved rufous postmedial line.

♀. Fore wing with the basal area not suffused with rufous, the antemedial line slight, rufous.

Hab. U.S.A., Arizona; Haiti (*Tweedie*), 1 ♀; Grenada (*H. H. Smith*), 2 ♂, 1 ♀ type. *Exp.* 28 millim.

B. Palpi of male fringed with short downturned hair in front, the tegulæ and femora normal.
- *a.* Fore wing with the lines silvery ..... *gulnare.*
- *b.* Fore wing with the lines brown defined by fulvous and whitish ..... *laverna.*
- *c.* Fore wing with the lines brown defined by whitish..... *malacha.*

*4509. Elydna gulnare.

Schinia gulnare, Streck. Proc. Davenport Ac. Sci. ii. p. 274, pl. ix. f. 1 (1878); Smith, Cat. Noct. N. Am. p. 213.

Head olive; thorax and abdomen olive with a metallic gloss, the ventral surface greyish. Fore wing olive with a silvery gloss, the lines silvery; antemedial line angled outwards below costa, then oblique; postmedial line acutely angled outwards at vein 6, then obliquely incurved; subterminal line acutely angled outwards to termen below apex, then obliquely incurved; a small golden mark just before apex and another patch pointed above and below on termen from the subterminal line to vein 2; cilia silvery grey. Hind wing pale glossy olive, the terminal area deeper olive. Underside rather paler; fore wing with the costal edge pale and with postmedial and subterminal striæ from costa, the apex with a golden gloss; hind wing with indistinct discoidal point and subterminal and terminal narrow bands.

Hab. U.S.A., Pennsylvania, Illinois. *Exp.* 40 millim. This species is unknown to me.

4510. Elydna laverna.

Xanthodes laverna, Druce, Biol. Centr.-Am., Het. i. p. 304, pl. 28. f. 13 (1889).

Head and thorax pale olive mixed with white, especially on head and base of tegulæ; palpi white with fulvous line at side of 2nd joint and fulvous tips; antennæ fulvous brown; pectus whitish; legs ochreous slightly irrorated with brown; abdomen ochreous with dorsal fulvous segmental lines, the ventral surface slightly irrorated with brown. Fore wing ochreous white thickly

irrorated with olive-brown, the costal edge fulvous; the 1st line almost medial, brown defined by fulvous and whitish on inner side, very oblique from costa to subcostal nervure, where it is acutely angled outwards, then inwardly oblique and with fulvous between the brown and white lines; postmedial line brown defined by fulvous then whitish on outer side, very oblique from costa to

Fig. 54.—*Elydna laverna*, ♂. ½.

vein 6 where it is acutely angled outwards and with whitish streak to termen, then very oblique to inner margin and slightly incurved; subterminal line brown defined by fulvous, then whitish on outer side, very oblique from costa to termen at vein 6, then inwardly oblique and slightly incurved; cilia rufous, red-brown at tips. Hind wing yellow suffused with rufous; cilia yellow at base, brownish at tips; the underside yellowish white, the costal and terminal areas broadly irrorated with red-brown, a curved pale rufous postmedial line.

Hab. Mexico, Cuesta de Misantla (*Trujillo*), 2 ♀, Jalapa (*Trujillo*), 1 ♀; Guatemala, Zapote (*Champion*), 1 ♀, S. Geronimo (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 38–44 millim.

4511. Elydna malacha.

Xanthodes malacha, Druce, Biol. Centr.-Am., Het. i. p. 305, pl. 28. f. 14 (1889).

Head and thorax grey-white irrorated with brown, the head tinged with rufous; palpi rufous except at base; antennæ rufous; pectus and legs ochreous white, the latter irrorated with brown; abdomen ochreous white slightly irrorated with brown and with dorsal fulvous yellow segmental lines. Fore wing white irrorated with red-brown, especially on costal area to postmedial line, beyond the antemedial line, before the postmedial line, and beyond the subterminal line; antemedial line red-brown defined by whitish on inner side, arising from middle of costa, slightly angled outwards on subcostal nervure, then oblique and slightly incurved; a slight brown discoidal line on a whitish patch; vein 6 with fine brown streak; postmedial line red-brown defined by whitish on outer side on inner half, very oblique from costa to vein 6 where it is acutely angled outwards, then obliquely incurved; subterminal line defined by whitish on inner side, very obliquely downcurved from costa to termen at vein 7, and obliquely incurved from termen at vein 6 to inner margin; a series of brown striæ just before termen; cilia

red-brown. Hind wing pale golden yellow; the underside yellowish white, the costal and terminal areas broadly irrorated with red-brown.

Hab. Mexico, Cuernavaca (*H. H. Smith*), 1 ♂ type, Durango (*Becker*), 1 ♀, Godman-Salvin Coll. *Exp.* ♂ 34, ♀ 36 millim.

C. Palpi of male normal.

a. (*Leucocosmia*). Vertex of head of male with a cleft corneous ridge clothed with scales; abdomen clothed with woolly pile; fore and hind wings with the basal half clothed with woolly hair above.

4512. Elydna reclusa.

Prodenia reclusa, Wlk. Journ. Linn. Soc. vi. p. 185 (1862); Hmpsn. Moths Ind. ii. p. 264.
Amphipyra agrotoides, Snell. Tijd. v. Ent. 1880, p. 77, pl. 6. f. 6.
Radinacra thoracica, Moore, Lep. Ceyl. iii. p. 31, pl. 148. f. 4 (1884).
Leucocosmia ceres, Butl. Trans. Ent. Soc. 1886, p. 394, pl. 9. f. 10.
Caradrina euthusa, Hmpsn. Ill. Het. B. M. viii. p. 79. pl. 145. f. 1 (1891).
Caradrina heliarcha, Meyr. Trans. Ent. Soc. 1897, p. 370.
Caradrina unipunctata, Beth.-Baker, Nov. Zool. xiii. p. 201 (1906).
Caradrina insignifica, Beth.-Baker, Nov. Zool. xiii. p. 201 (1906).

♂. Head and thorax brownish ochreous irrorated with some black scales; palpi black at sides, whitish in front and at tips; antennæ with black spot on basal joint behind, the shaft blackish; tegulæ black-brown, ochreous white at base and sides; abdomen

Fig. 55.—*Elydna reclusa*, ♂. ½.

black-brown, the extremity and anal tuft whitish; pectus, legs, and ventral surface of abdomen whitish. Fore wing ochreous tinged with rufous and slightly irrorated with fuscous except on basal area which is thickly clothed with olive-yellow scales; subbasal line blackish, minutely waved, from costa to submedian fold: antemedial line indistinct, double, slightly bent inwards to costa and obsolete towards inner margin; traces of a minute round orbicular with two black points on its outer edge; reniform absent; an indistinct diffused slightly curved medial line; a dark point on costa above end of cell; postmedial line indistinctly double filled in with whitish, slightly excurved from costa to vein 4, then oblique; subterminal line absent; a terminal series of slight black points; cilia with a pale line at base. Hind wing whitish tinged with brown, the basal area with yellowish, the veins browner; some brown on middle of inner margin; cilia yellowish white with a slight brown line through them; the underside whiter, the costal area irrorated with brown, a small brown discoidal spot, post-

medial series of points on the veins and terminal series from apex to vein 2.

Hab. Bombay (*Leith*), 1 ♂; Madras, Belgaum (*Watson*), 2 ♂, Nilgiris (*Hampson*), 2 ♀ type *euthusa*; Ceylon, 1 ♂, 3 ♀ type *thoracica*; Yunnan, Teng Yeuk (*Hobson*), 1 ♀; Singapore (*Ridley*), 2 ♀; N. Borneo, M. Marapok, 1 ♀; Celebes; Br. N. Guinea, Ekeikei, Mt. Kebea, Aroa R., types † *unipunctata* and *insignifica* in Coll. Bethune-Baker; Queensland, Brisbane (*Turner*), 1 ♂, 1 ♀; Fiji, 1 ♀ type *ceres*; Sandwich Is., Oahu (*Perkins*), 2 ♂, 1 ♀. *Exp.* 30–36 millim.

b. Vertex of head of male normal.

a^1. (*Floccifera.*) Abdomen of male with large sublateral tufts of flocculent hair from base.

4513. Elydna erigida.

Aletia erigida, Swinh. Trans. Ent. Soc. 1890, p. 221; Hmpsn. Moths Ind. ii. p. 281.

Caradrina crenulata, Beth.-Baker, Nov. Zool. xiii. p. 202 (1906).

Head and thorax ochreous suffused with grey-brown, the frons whiter; palpi black at sides, whitish in front and at tips; antennæ blackish except basal joint; pectus and legs whitish irrorated with fuscous; abdomen grey-brown, the anal tuft whitish, the ventral surface whitish irrorated with fuscous. Fore wing greyish ochreous

Fig. 56.—*Elydna erigida*, ♂. ½.

thickly irrorated with brown; subbasal line slight, blackish, angled outwards below costa and ending in a black point below median nervure; antemedial line very indistinct, waved, bent inwards to costa; orbicular represented by a black point, the reniform by a small white spot with a point above it at upper angle of cell and two at lower angle; a diffused medial dark shade, oblique from costa to lower angle of cell; postmedial line indistinct, dark, slightly bent outwards below costa, then oblique, minutely dentate and produced to black points on the veins; a subterminal series of blackish points slightly excurved below vein 7 and at middle; a terminal series of slight black points; cilia with a fine yellowish line at base. Hind wing semihyaline whitish tinged with brown, the veins browner; a fine brown terminal line; cilia yellowish white with a fine brown line through them; the underside whiter, the costal area irrorated with brown, a small discoidal spot, post-

medial series of short streaks on the veins, and terminal series of points from apex to vein 2.

Hab. Travancore, Pirmád (*Imray*), 1 ♀; Burma, Rangoon, 1 ♂ type, N. Chin Hills (*Watson*), 1 ♂; Br. N. Guinea, Mt. Kebea (*Pratt*), type† *crenulata* in Coll. Bethune-Baker. *Exp.* 36–40 millim.

b^1. Abdomen of male without sublateral tufts of long hair from base.
  a^2. Hind wing of male with the costal area on underside clothed with rough downturned scales, with thicker ridge of scales along subcostal nervure.
    a^3. Hind wing of male on underside with ridge of scales on medial part of vein 1, covered by a thick fringe of hair from inner margin.
      a^4. Fore wing with the reniform represented by some white points ..... *stellata*.
      b^4. Fore wing with the reniform represented by a slight black point ..... *gemini*.

4514. Elydna stellata.

Graphiphora stellata, Moore, Lep. Atk. p. 119 (1882); Hmpsn. Moths Ind. ii. p. 265.
Caradrina lophophora, Hmpsn. Trans. Ent. Soc. 1895, p. 299; id. Moths Ind. iv. p. 512.
Caradrina pratti, Beth.-Baker, Nov. Zool. xiii. p. 202 (1906).

♂. Head and thorax reddish brown mixed with grey; palpi blackish, whitish at tips and in front; tegulæ tipped with whitish;

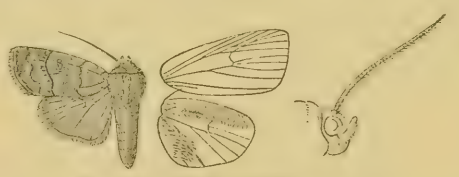


Fig. 57.—*Elydna stellata*, ♂. ½.

tarsi fuscous ringed with white; abdomen grey suffused with brown. Fore wing grey suffused and irrorated with reddish brown; subbasal line blackish, angled outwards below costa and ending at submedian fold, a white point beyond it in cell; antemedial line indistinctly double, blackish, erect, slightly bent inwards to costa and outwards above inner margin; orbicular absent; reniform represented by a small white spot with white point above it and usually two below it; a brown medial line, oblique from costa to median nervure, then incurved; postmedial line blackish, slightly excurved between veins 7 and 2 and with short black streaks beyond it on the veins followed by an indistinct diffused brown line; subterminal line rather diffused, brown, excurved below vein 7 and at middle; a fine terminal brown line with whitish points at the veins. Hind wing greyish suffused

with reddish brown; a fine brown terminal line; cilia whitish with slight brown line near base; the underside with the costal area irrorated with brown, the discal fold tinged with fulvous, the hair on inner area fuscous brown, an indistinct curved postmedial line.

♀. Hind wing whiter with indistinct postmedial line; the underside whitish, the costal area irrorated with brown, a slight discoidal bar and diffused sinuous postmedial line.

Ab. 1. Fore wing with the discal spot yellowish, a small black spot before subterminal line in discal fold.

Hab. Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂, 1 ♀; Sikhim (*Dudgeon*), 1 ♀; Assam, Khásis, 1 ♀ type, Nágas, type † *lophophora* in Coll. Rothschild; Borneo, Sarawak (*Wallace*), 1 ♀; Br. New Guinea, Dinawa (*Pratt*), 1 ♂. *Exp.* 28–32 millim. Type † *pratti* in Coll. Bethune-Baker.

*4515. Elydna gemini. (Plate CXLI. fig. 14.)

Caradrina gemini, Beth.-Baker, Nov. Zool. xiii. p. 202 (1906).

♀. Head and thorax grey-white tinged with reddish brown and irrorated with a few black scales; palpi black, white at tips; lower part of frons white; pectus and legs whitish mixed with brown, the tarsi black; abdomen grey suffused with brown. Fore wing grey-white suffused with brown and irrorated with black; subbasal line represented by a black point on costa; antemedial line with black point on costa, then very indistinct, waved; orbicular and reniform represented by very slight black points; a faint brown medial line, oblique from costa to lower angle of cell, postmedial line with black point on costa, then very faint, minutely dentate with slight black points at the veins, incurved at submedian fold, a rather diffused rounded black spot beyond it on veins 4, 3; faint traces of a subterminal line with the area beyond it somewhat browner; a terminal series of small black lunules. Hind wing grey suffused with brown; cilia whitish with a faint brown line through them; the underside whitish tinged with brown, the costal area irrorated with black, a black discoidal lunule, postmedial series of minute streaks on the veins, and terminal series of slight lunules.

Hab. Br. N. Guinea, Ekeikei (*Pratt*), type † ♀ in Coll. Bethune-Baker. *Exp.* 36 millim.

*b*³. (*Dadica.*) Hind wing of male with the inner area normal.

4516. Elydna lineosa.

Dadica lineosa, Moore, P. Z. S. 1881, p. 349; Hmpsn. Moths Ind. ii. p. 265.

♂. Head and thorax grey mixed with reddish brown, the head whiter; palpi blackish, whitish at tips; abdomen grey suffused with reddish brown. Fore wing pale grey slightly suffused and irrorated with reddish brown, the veins with dark streaks; subbasal line blackish, straight, from costa to submedian fold; ante-

medial line blackish, oblique, straight, slightly bent inwards to costa; orbicular a minute black point; reniform a small white spot with white point above it; a rather diffused brown medial line, very oblique from costa to lower angle of cell, then slightly incurved; postmedial line blackish, slightly excurved below vein 7,

Fig. 58.—*Elydna lineosa*, ♂. ½.

then oblique; subterminal line indistinct, brown, slightly angled outwards at vein 7 and excurved at middle. Hind wing greyish suffused with fuscous brown, the apical area whitish; cilia whitish; the underside suffused with fuscous brown, the terminal area paler, an indistinct subterminal line.

♀. Hind wing on underside whitish irrorated with brown, a dark discoidal bar and indistinct postmedial line.

Hab. Japan, Tokio (*Maries*), 1 ♂, 1 ♀, Yokohama (*Pryer*), 3 ♂, 2 ♀; Corea, Gensan (*Leech*), 1 ♀; W. China, Omei-shán, 1 ♀, Chang-yang (*Pratt*), 1 ♂; Punjab, Kulu (*Hocking*), 1 ♂, 1 ♀, Dalhousie, 1 ♂, type. *Exp.* 34–42 millim.

*b*². Fore and hind wings of male with the medial part of termen excised.

4517. Elydna truncipennis, n. sp.

Head and thorax whitish suffused with pale rufous, the head rather whiter; palpi blackish, whitish at tips and in front; tarsi blackish ringed with white; abdomen greyish suffused with fuscous brown. Fore wing pale rufous with slight dark irroration, the

Fig. 59.—*Elydna truncipennis*, ♂. ½.

terminal area rather darker; subbasal line blackish, straight from costa to submedian fold in which there is a black point beyond it and a white point in cell further from base; antemedial line blackish, erect, slightly bent inwards to costa and incurved below submedian fold; orbicular represented by a black point, the reniform by a small yellowish-white spot usually with white point above it and two minute points below it; a diffused dark medial line, oblique from costa to median nervure, then incurved;

postmedial line blackish, slightly bent inwards to costa and incurved below vein 3, with minute black streaks beyond it on the veins; subterminal line indistinct, brown, slightly incurved between veins 6 and 4; a fine dark terminal line; cilia fuscous brown with a fine whitish line at base. Hind wing whitish suffused with brown especially on the veins and terminal area; cilia whitish with a brownish line near base from apex to vein 2; the underside with the costal area irrorated with brown, a small discoidal spot, postmedial series of slight black streaks on the veins and traces of a postmedial line towards costa.

Hab. Japan, Satsuma (*Leech*), 1 ♂, Tokio (*Maries*), 1 ♂, Yokohama (*Jonas, Manley, Pryer*), 4 ♂, 3 ♀; Corea, Gensan (*Leech*), 1 ♂; N. China (*Fletcher*), 1 ♀, Foochow (*Leech*), 1 ♂; W. China, Chia-kou-ho (*Pratt*), 1 ♂, Omei-shan, 1 ♀; Punjab, Kulu, Sultanpur (*G. Young*), 1 ♂; Sikhim (*Dudgeon*), 1 ♀; Assam, Khásis, 1 ♂, type; Ceylon, Pundaloya (*Green*), 1 ♀. *Exp.* 28–34 millim.

c^2. (*Elydna.*) Wings of male normal.
  a^3. Fore wing grey-brown.
    a^4. Fore wing with the postmedial line minutely dentate.
      a^5. Fore wing with ochreous spot on outer edge of reniform, with white points above and below it ..... *ochreipuncta.*
      b^5. Fore wing with white points on outer edge of reniform..... *subpartita.*
      c^5. Fore wing without white points on outer edge of reniform ..... *cinerascens.*
    b^4. Fore wing with the postmedial line not dentate.
      a^5. Fore wing with series of black points on the veins beyond postmedial line ..... *renalis.*
      b^5. Fore wing with series of short black streaks on the veins beyond postmedial line.
        a^6. Fore wing with the postmedial line excurved from costa to vein 4, then incurved... ..... *albisignata.*
        b^6. Fore wing with the postmedial line straight from just below costa to inner margin ... *rectilinea.*
  b^3. Fore wing with the ground-colour greyish ochreous, yellow, or red-brown.
    a^4. Fore wing with blackish patches on costa at middle and before apex ..... *bisignata.*
    b^4. Fore wing with chocolate-brown patches on costa at middle and before apex.
      a^5. Fore wing grey tinged with pink ..... *pellicea.*
      b^5. Fore wing red-brown tinged with purple..... *costiplaga.*
    c^4. Fore wing without dark patches on costa.
      a^5. Fore wing with the postmedial line minutely waved and excurved beyond the cell.
        a^6. Fore wing with black discoidal spot or point. *atripuncta.*
        b^6. Fore wing without black discoidal spot or point ..... *ochracea.*
      b^5. Fore wing with the postmedial line not waved, angled at vein 6, then oblique.
        a^6. Fore wing with the antemedial line bent inwards to costa ..... *inconspicua.*
        b^6. Fore wing with the antemedial line oblique, straight .... *transversa.*

4518. Elydna ochreipuncta. (Plate CXLI. fig. 15.)

Caradrina ochreipuncta, Hmpsn. Moths Ind. ii. p. 263 (1894).

Head and thorax dark purplish brown; palpi with some whitish scales in front and at tips; antennæ with the basal joint white in front; tarsi ringed with white; abdomen greyish brown, the anal tuft rufous. Fore wing dark red-brown suffused with purple; subbasal line black, waved, from costa to submedian fold; antemedial line black, oblique, waved, angled inwards on vein 1; orbicular a black point; reniform indistinct, brown, slightly defined by black, with round ochreous spot on its outer edge with white point above it and two below it; an indistinct medial line, oblique from costa to discal fold; postmedial line black, slightly bent outwards below costa, then dentate, oblique below vein 4, some ochreous points beyond it on costa; subterminal line formed by some whitish scales defined on inner side by minute black marks, excurved below vein 7 and at middle; a slight dark terminal line. Hind wing greyish suffused with reddish brown; a brown line near base of cilia; the underside whitish tinged with brown, the costal and terminal areas irrorated with brown, a blackish discoidal spot and rather diffused sinuous postmedial line.

Hab. Sikhim (*Pilcher*), 1 ♂. *Exp.* 40–42 millim. Type † in Coll Rothschild.

4519. Elydna subpartita. (Plate CXLI. fig. 16.)

Caradrina subpartita, Beth.-Baker, Nov. Zool. xiii. p. 201 (1906), ♂.
Caradrina funerea, Beth.-Baker, Nov. Zool. xiii. p. 201 (1906), ♀.

♂. Head, thorax, and abdomen red-brown; palpi black, whitish at tips; antennæ with the shaft whitish above towards base; pectus and legs whitish mixed with brown, the tarsi blackish ringed with white; abdomen ventrally whitish mixed with red-brown. Fore wing whitish strongly suffused and irrorated with red-brown, the terminal half darker; subbasal line blackish, excurved below costa and ending at submedian fold; a blackish point beyond it in cell; antemedial line indistinctly double towards costa and inner margin, angled inwards on median nervure and vein 1; orbicular represented by a black point; reniform very indistinctly defined, with small whitish spot on its outer edge with white point above it and two below it and a white point on inner side below; a diffused curved dark medial line; postmedial line black defined on outer side by a pale band, minutely dentate, excurved from costa to vein 4, then oblique; subterminal line very indistinct, greyish defined on inner side by black points and with more prominent spot at discal fold, slightly excurved below vein 7 and at middle; a terminal series of black points; cilia with a fine pale line at base. Hind wing whitish tinged with red-brown, the veins and termen red-brown; a fine brown terminal line; cilia whitish with a brown

line through them ; the underside whitish, the costal area irrorated with brown, a postmedial series of minute dark streaks on the veins from costa to vein 2.

♀. Head, thorax, and abdomen tinged with fuscous ; fore wing with a uniform fuscous tinge obscuring the markings.

Hab. Br. N. Guinea, Aroa R., Ekeikei (*Pratt*), 1 ♀, Mt. Kebea, type † and type † *funerea* in Coll. Bethune-Baker. *Exp.* ♂ 32, ♀ 36 millim.

4520. Elydna cinerascens.

Cosmia cinerascens, Motsch. Étud. Ent. ix. p. 34 (1860).
Radinacra palpalis, Butl. A. M. N. H. (5) i. p. 161 (1878) ; id. Ill. Het. B. M. ii. p. 26, pl. 29. f. 7.

Head, thorax, and abdomen grey mixed with brown ; palpi black, whitish at tips ; tarsi fuscous ringed with white. Fore wing grey tinged with ochreous brown and thickly irrorated with fuscous ; subbasal line slight, blackish, angled outwards below costa and ending at submedian fold ; antemedial line slight, blackish, oblique, sinuous ; orbicular a black point ; reniform hardly traceable with faint pale points on its edges ; a diffused blackish medial line, oblique from costa to lower angle of cell, then inwardly oblique ; postmedial line blackish, dentate and produced to black points on the veins, excurved to vein 4, then oblique ; subterminal line hardly traceable, excurved below vein 7 and at middle ; a terminal series of minute black points. Hind wing whitish suffused with brown especially on terminal area ; cilia with a slight yellowish line at base ; the underside white tinged and irrorated with brown especially on costal area, a blackish discoidal spot, indistinct postmedial line with minute dark streaks on the veins from costa to vein 4, and terminal series of small black lunules from apex to vein 2.

Hab. Japan, Yokohama (*Jonas*, *Pryer*), 7 ♂, 2 ♀ type *palpalis* ; W. China, Chang-yang (*Pratt*), 1 ♀. *Exp.* 28–36 millim.

4521. Elydna renalis.

Radinacra renalis, Moore, Lep. Ceyl. iii. p. 30, pl. 147. f. 4 *a* (1884) ; Hmpsr. Moths Ind. ii. p. 265.

Head and thorax reddish brown slightly mixed with grey ; palpi black, whitish at tips ; antennæ blackish ringed with white at base ; tarsi blackish ringed with white ; abdomen grey-brown, the ventral surface white irrorated with brown. Fore wing dark reddish brown slightly irrorated with grey ; subbasal line indistinct, waved, from costa to submedian fold, a white point beyond in cell ; antemedial line black, excurved towards costa and inner margin and angled inwards below submedian fold ; orbicular a black point defined by white scales ; reniform a round white spot with small spot above it and one white point below it on inner side and two

on outer; an indistinct diffused sinuous dark medial line; postmedial line black, excurved from below costa to vein 4, then incurved, with series of black points beyond it on the veins and some grey points on costa; subterminal line slight, greyish defined on inner side by dark brown, excurved below vein 7 and at middle, incurved at submedian fold and bent outwards to tornus; a fine brown terminal line with minute white points at the veins. Hind wing whitish suffused with brown; a fine brown terminal line; cilia with yellowish line at base followed by a brown line, the tips white tinged with brown at apex; the underside white, the costal area prominently irrorated with brown, the terminal area slightly irrorated, a black discoidal spot, and indistinct postmedial line with dark streaks on the veins.

Hab. Ceylon, Pundaloya (*Green*), 2 ♂, 2 ♀ type. *Exp.* 26 millim.

4522. Elydna albisignata.

Caradrina albisignata, Oberth. Diag. Lep. Askold. p. 14 (1879); Staud. Cat. Lep. pal. p. 198.
Caradrina cæca, Oberth. Diag. Lep. Askold. p. 14 (1879).
Caradrina albosignata, Oberth. Ét. Ent. v. p. 73, pl. 4. f. 1 (1880); Mill. Ann. Soc. Linn. Lyons, xxix. p. 154, pl. 1. f. 2 (1883).

Head and thorax greyish brown; palpi fuscous brown; pectus and legs fuscous brown, the tarsi ringed with white; abdomen grey-brown, the ventral surface fuscous brown. Fore wing grey-brown with slight dark irroration, the terminal area rather darker; subbasal line black, slightly sinuous, from costa to submedian fold; antemedial line blackish, excurved from costa to median nervure, then incurved and slightly excurved above inner margin; orbicular absent; reniform indistinct, blackish with a white point on it, sometimes with a minute point above it; an indistinct diffused medial line, erect from costa to lower angle of cell, then incurved; postmedial line blackish, oblique from costa to below vein 7 and slightly incurved below vein 3, with minute black streaks beyond it on the veins; an indistinct diffused dark subterminal line, angled outwards at vein 7 and excurved at middle; a terminal series of slight whitish points; cilia dark brown at base. Hind wing whitish suffused with brown; cilia whitish with a slight brown line near base; the underside greyish, the costal area thickly irrorated with brown, a dark discoidal point and diffused postmedial line with minute dark streaks on the veins.

Ab. 1. *cæca*. Fore wing without the white point on reniform.

Hab. ? S. France, Alpes Maritimes; E. Siberia, Amurland, 2 ♂, 1 ♀; Japan, Hakodaté, 6 ♂, Oiwake (*Pryer*), 1 ♂, Tokio (*Maries*), 1 ♀; Corea, Gensan (*Leech*), 1 ♂. *Exp.* 30–36 millim.

4523. Elydna rectilinea, n. sp. (Plate CXLI. fig. 17.)

Head and thorax whitish tinged with rufous, the head rather whiter; palpi fuscous, white at tips and in front; tarsi fuscous ringed with white; abdomen grey tinged with brown. Fore wing

pale grey tinged with pale reddish brown; subbasal line slight, dark, straight, from costa to submedian fold; antemedial line blackish, oblique, straight or slightly incurved in submedian interspace, slightly bent inwards to costa; orbicular represented by a minute dark point, the reniform by some white scales; a diffused dark medial shade, oblique from costa to lower angle of cell, then erect; postmedial line blackish, erect, straight, slightly bent inwards to costa, with minute black streaks beyond it on the veins; subterminal line indistinct, dark, rather diffused, excurved below vein 7 and at middle; a fine brown terminal line with minute white points at the veins; cilia grey-brown with a slight yellowish line at base. Hind wing whitish suffused with brown; a fine brown terminal line; cilia whitish with a yellowish line at base; the underside white, the marginal areas irrorated with brown, a brown discoidal lunule, diffused sinuous subterminal line, and terminal series of black striæ.

Hab. Punjab, Kulu (*Hocking*), 2 ♀, Sultanpur (*G. Young*), 1 ♂ type, Dalhousie (*Harford*), 2 ♀. *Exp.* 32 millim.

4524. Elydna bisignata. (Plate CXLI. fig. 18.)

Cosmia bisignata, Hmpsn. J. Bomb. Soc. xvii. p. 476 (1906).

♀. Head and thorax whitish tinged with rufous, palpi white, the extremity of 1st joint and 2nd joint except at extremity black; antennæ fuscous; fore and mid tibiæ fuscous, the tarsi fuscous ringed with white; abdomen greyish white with faint ochreous segmental rings, the ventral surface white. Fore wing greyish ochreous slightly tinged with rufous and irrorated with brown; subbasal line represented by a small black spot on costa and indistinct striga in cell; antemedial line with small black spot on costa, then pale brown defined by whitish on inner side, obliquely incurved; orbicular and reniform with very faint pale annuli, the former round, the latter constricted at middle and with rather S-shaped black mark on its inner edge confluent with an oblique blackish patch from costa; an indistinct incurved pale line from lower angle of cell to inner margin with dark point on it in discal fold; postmedial line double, pale brown filled in with whitish, and with black point on the inner line at costa, excurved from costa to vein 4, then incurved; a quadrate black patch on costa before the subterminal line, which is indistinct, pale, slightly defined by fuscous on inner side, minutely waved and ending at tornus; a terminal series of black striæ; cilia ochreous white tinged with rufous and with blackish tips except towards tornus. Hind wing ochreous white tinged with brown especially on the veins and terminal area; a fine brown terminal line; cilia with a fine white line at base; the underside white, the costal and terminal areas irrorated with brown, a slight dark discoidal lunule.

Hab. Madras, Bellary, Ramandrug (*Campbell*), 1 ♀ type. *Exp.* 34 millim.

4525. Elydna pellicea. (Plate CXLI. fig. 19.)

Plecoptera pellicea, Swinh. A. M. N. H. (7) xi. p. 507 (1903).

♂. Head and thorax pale pinkish grey with an ochreous tinge; palpi black at sides except at tips; sides of frons and shoulders with black patches; spurs and tarsi blackish with pale rings; abdomen ochreous brown, the anal tuft yellowish, the ventral surface whitish. Fore wing greyish ochreous tinged with purplish pink; a black point at base of costa; faint traces of an oblique waved antemedial line with black point at costa; a chocolate-brown conical patch on middle of costa, its apex almost reaching median nervure and somewhat dilated on outer side; postmedial line very indistinct, bent outwards below costa, then dentate and produced to slight blackish points on the veins, incurved in submedian interspace where there is a black point before it; a truncate conical chocolate-brown patch on costa before apex; faint traces of a minutely waved subterminal line; a series of slight blackish points just before termen; cilia brown with fine pale lines at base and middle. Hind wing ochreous suffused with brown, the cilia paler; the underside ochreous white, the costal area and terminal area to vein 2 irrorated with brown, a brown discoidal lunule and indistinct curved postmedial line.

Hab. Siam, Muok-Lek, 10,000 feet (*Fruhstorfer*), 1 ♂ type. *Exp.* 40 millim.

*4526. Elydna costiplaga. (Plate CXLI. fig. 20.)

Ædia costiplaga, Beth.-Baker, Nov. Zool. xiii. p. 254 (1906).
Hypætra costiplaga, Beth.-Baker, Nov. Zool. xv. p. 201 (1908).

♀. Head and thorax red-brown mixed with grey; palpi whitish, the 2nd joint black on outer side except at extremity; frons whitish; pectus and legs whitish suffused with brown; abdomen red-brown with slight rufous dorsal line, the ventral surface whitish tinged with brown. Fore wing red-brown mixed with purplish grey; a small subbasal black spot on costa; traces of an oblique waved antemedial line with black spot on costa; a conical chocolate-brown patch from middle of costa to lower angle of cell, defined on outer side by a sinuous black and white line on discocellulars; postmedial line indistinct and whitish from costa to vein 4, bent outwards below costa, oblique to vein 6 where it is angled outwards, angled inwards in discal fold and outwards at vein 4, then dark, strongly incurved and bent outwards to inner margin, a black point before it in submedian fold and a truncate conical chocolate-brown patch beyond it from costa defined on outer side by the faint whitish subterminal line which is oblique towards costa, slightly excurved below vein 7 and at middle and ending at tornus; a series of faint blackish points just before termen; cilia dark brown mixed with some greyish and with slight ochreous line at base. Hind wing fuscous brown with a cupreous gloss; cilia brown with a slight

pale line at base from apex to vein 2, then whitish tinged with brown; the underside whitish tinged with reddish ochreous and irrorated with red-brown on costal half, a small black discoidal spot and curved minutely waved postmedial line.

Hab. Br. N. Guinea, Ekeikei (*Pratt*), types † ♀ in Coll. Bethune-Baker. *Exp.* 40 millim.

4527. **Elydna atripuncta**, n. sp. (Plate CXLI. fig. 21.)

♀. Head white, the palpi, frons, and antennæ except at base dark brown; thorax white tinged with ochreous and irrorated with a few black scales; tibiæ and tarsi brown; abdomen whitish dorsally tinged with ochreous and irrorated with a few dark scales except at base. Fore wing white tinged with ochreous and irrorated with black scales, the terminal area tinged with rufous; antemedial line brown, double on inner area, oblique towards costa, then waved, angled outwards at vein 1; a round black discoidal spot; postmedial line brown, excurved and minutely waved to vein 2, angled inwards in submedian fold to near antemedial line and outwards on vein 1; subterminal line diffused, brown, oblique from costa to vein 7, incurved at discal and submedian folds; a series of small black spots before termen; cilia ochreous with series of fuscous points. Hind wing whitish suffused with ochreous yellow especially on terminal area; the underside whitish, the costal and terminal areas irrorated with brown, a small discoidal spot.

♂. Fore wing with black discoidal spot.

Hab. Ceylon, Kandy (*Green*), 1 ♂, Puttalam (*Pole*), 1 ♀ type. *Exp.* 36 millim.

*4528. **Elydna ochracea.** (Plate CXLI. fig. 22.)

Cosmia ochracea, Hmpsn. Moths Ind. ii. p. 322 (1894).

♀. Head, thorax, and abdomen ochreous yellow; palpi, antennæ, and legs tinged with brown. Fore wing ochreous yellow irrorated with a few black scales, the terminal area suffused with red-brown; subbasal line represented by a black point on costa; antemedial line indistinct, brown with black point on costa, oblique towards costa, then waved; orbicular absent; reniform represented by a faint elliptical pale patch; postmedial line brown with black point at costa, minutely waved, excurved from costa to vein 4, then incurved; subterminal line brown, minutely waved, angled outwards at vein 7 and excurved at middle; a series of minute blackish striæ before termen; cilia dark brown with fine yellowish lines at base and middle. Hind wing pale yellow, the terminal area slightly tinged with rufous; the underside with the costal area and terminal area to vein 2 slightly irrorated with black, a small brown discoidal spot.

Hab. Burma, E. Pegu, 4,500 feet (*Doherty*), type † ♀ in Coll. Rothschild. *Exp.* 42 millim.

*4529. Elydna inconspicua. (Plate CXLI. fig. 23.)

Cosmia inconspicua, Beth.-Baker, Nov. Zool. xiii. p. 210 (1906).

♀. Head white; palpi tinged with brown except at base in front; frons brown; antennæ tinged with brown; thorax pale reddish ochreous sparsely irrorated with large black scales; legs brown, the tarsi ringed with white; abdomen reddish ochreous, the ventral surface whitish. Fore wing ochreous tinged with rufous and sparsely irrorated with black scales, the costal area white to beyond middle; antemedial line diffused, fuscous, bent inwards to costa; a small brownish discoidal spot; postmedial line diffused, fuscous, oblique from costa to vein 6 just beyond the cell, then inwardly oblique; a very indistinct dentate brown subterminal line, bent inwards to costa; a series of slight blackish points just before termen; cilia fuscous with a reddish ochreous line at base. Hind wing ochreous yellow, the termen slightly tinged with rufous; cilia yellowish at base, with brownish line at middle and white tips; the underside yellowish white, the apical area slightly tinged with rufous and irrorated with brown, an oblique brown postmedial line from costa to vein 6.

Hab. Br. New Guinea, Ekeikei (*Pratt*), type † ♀ in Coll. Bethune-Baker. *Exp.* 34 millim.

4530. Elydna transversa.

Elydna transversa, Wlk. xv. 1713 (1858); Hmpsn. Moths Ind. ii. p. 321.

♂. Head, thorax, and abdomen ochreous tinged with rufous and slightly irrorated with fuscous. Fore wing ochreous tinged with rufous and irrorated with fuscous; subbasal line slight, dark,

Fig. 60.—*Elydna transversa*, ♂. ½.

oblique, from costa to submedian fold; antemedial line dark brown, very oblique, straight; a dark line on discocellulars; postmedial line dark brown, oblique from costa to vein 6, then slightly incurved; subterminal line dark brown, oblique from costa to vein 6 and ending at tornus; a fine brown terminal line; cilia at tips with dark brown mixed. Hind wing ochreous suffused with rufous, the costal half suffused with fuscous brown; cilia black-brown, from apex to vein 2; the underside reddish ochreous, the apical area slightly irrorated with brown.

♀. Hind wing wholly ochreous.

Hab. Bombay, Kanara (*Ward*), 1 ♀, Karwar (*Bell*), 1 ♀; Ceylon, Kandy (*Mackwood*), 1 ♂; Burma, Moulmein (*Clerk*), 1 ♀ type. *Exp.* 34–40 millim.

Genus CLOSTEROMORPHA.

Type.

Closteromorpha, Feld. Reis. Nov. p. 3 (1874), non descr. ..... *reniplaga.*

Proboscis fully developed; palpi upturned, slenderly scaled, the 2nd joint reaching vertex of head, the 3rd long; frons smooth; eyes large, round; antennæ of male almost simple; thorax clothed almost entirely with scales and without crests; mid tibiæ moderately fringed with hair; hind tibiæ of male dilated with a fold on upper side containing a fringe of large scales; abdomen without crests. Fore wing broad, the apex rounded, the termen slightly excised from vein 3 to tornus; vein 2 somewhat curved upwards; 3 and 5 from near angle of cell; 6 from below upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing ample; veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the apical chocolate patch cornucopia-shaped ..... *reniplaga.*
B. Fore wing with the apical chocolate patch rounded below... *modesta.*

4531. Closteromorpha reniplaga.

Closteromorpha reniplaga, Feld. Reis. Nov. pl. 83. f. 16 (1874).

♂. Head, thorax, and abdomen bright rufous; tibiæ with some chocolate-brown. Fore wing bright rufous with a greyish tinge, especially on inner area and terminal half; subbasal line slight, pale, from costa to submedian fold; antemedial line pale, rather oblique and slightly incurved; orbicular and reniform small, with whitish annuli, the former narrow, elliptical, the latter bar-shaped,

Fig. 61.—*Closteromorpha reniplaga*, ♂. ½.

open below; a large cornucopia-shaped chocolate-brown patch with pale edges, extending on costa from above reniform to apex and down to vein 3 where its apex is curved outwards, the pale post-medial line arising from it, strongly incurved, then erect; a terminal series of chocolate-brown striæ from below apex to vein 2, below which there is a small round spot; cilia rufous with a fine pale line at base. Hind wing deep red-brown; cilia with a fine

pale line at base and whitish tips; the underside red-brown irrorated with white.

♀. Fore wing much greyer, the postmedial patch rufous.

Hab. Br. Guiana, Demarara (*Rodway*), 1 ♀; Brazil, type † ♂ in Coll. Rothschild. *Exp.* 42 millim.

4532. Closteromorpha modesta. (Plate CXLI. fig. 24.)

Closteromorpha modesta, Butler, Trans. Ent. Soc. 1878, p. 69.

♂. Head and thorax rufous; tarsi ringed with whitish; abdomen rufous irrorated with a few large black scales, the ventral surface dark red-brown, the genital tufts white. Fore wing rufous, the apical area beyond the reniform down to vein 4 deep chocolate-brown with some blue-white suffusion on costal area between postmedial and subterminal lines; antemedial line rufous, oblique from costa to median nervure, then slightly sinuous; orbicular represented by a whitish point defined by brown; reniform an oblique fuscous black bar with white annulus; postmedial line whitish, strongly bent outwards below costa, excurved to vein 6, incurved to vein 4, then bent inwards to lower extremity of reniform and oblique to inner margin; subterminal line represented by two white points below costa, then excurved and almost obsolete to vein 3, then whitish and oblique to tornus. Hind wing black-brown with a reddish tinge. Underside of both wings black-brown; fore wing with the inner and terminal areas greyish and with two subterminal white points below costa.

Hab. Brazil, Amazons, Paraña de Buyassu (*Austen*), 1 ♂, Parantins (*Trail*), 1 ♂ type. *Exp.* 40 millim.

Genus **NEOCALYMNIA**, nov.

Type, *N. obconica*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales and without crests; fore and mid tibiæ moderately fringed with hair, the hind tibia and 1st joint of tarsus moderately fringed with hair above and below; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen strongly excurved at middle, then excised to tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 7, 8, 9 stalked; 10, 11 from cell. Hind wing with the tornus lobed; veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

*4533. Neocalymnia obconica.

Neocalymnia obconica, Druce, A. M. N. H. (8) i. p. 302 (1908).

♂. Head and thorax red-brown, the vertex of head whitish tinged with rufous; pectus whitish tinged with rufous; abdomen rufous with a yellowish tinge. Fore wing red-brown mixed with greyish ochreous, the basal area more rufous, a large conical chocolate-brown patch on postmedial area from costa to vein 3; subbasal line absent; antemedial line greyish defined by brown on

outer side, erect to submedian fold and bent outwards to inner margin; orbicular with faint greyish annulus, elliptical; a greyish discoidal bar with curved streak from it to subterminal line below the chocolate patch; a sinuous dark medial line; postmedial line represented by a slight oblique pale line from submedian fold to inner margin near tornus; subterminal line only defined by the terminal area being slightly greyer, angled outwards at vein 7 and

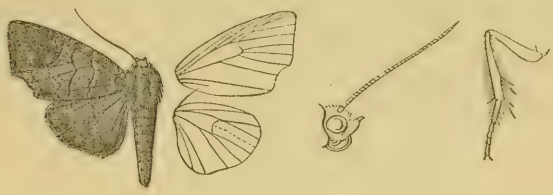


Fig. 62.—*Neocalymnia obconica*, ♂. ½.

incurved at discal fold and below vein 3; a terminal series of slight dark lunules. Hind wing black-brown with a reddish tinge; cilia greyish, dark at tips. Underside of both wings uniform black-brown.

Hab. Peru, S. Domingo (*Ockenden*), type† ♂ in Coll. Druce. *Exp.* 38 millim.

Genus **ANDROLYMNIA**, nov.

Type, *A. emarginata.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching vertex of head and slenderly scaled, the 3rd long; frons smooth, with large tuft of hair above; eyes large, round; antennæ of male somewhat laminate and almost simple; thorax clothed chiefly with scales, the prothorax with ridge-like crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing typically with the apex produced and acute, the termen excised below apex and excurved at middle, the inner margin with antemedial lobe and scale-tooth; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Fore wing of male with the apex produced to a rounded lobe, the termen strongly excised below it and not excurved at middle, the cell broad and the neuration rather distorted.

4534. Androlymnia torsivena.

Perciana torsivena, Hmpsn. Ann. S. Afr. Mus. ii. p. 376 (1902).

♂. Head, thorax, and abdomen purplish grey mixed with some brown; palpi blackish at sides. Fore wing purplish grey irrorated with chocolate-brown; subbasal line indistinct, brown, sinuous, from costa to submedian fold; antemedial line slight, brown, oblique to submedian fold and incurved at vein 1; orbicular absent; reniform with slight white annulus, its centre slightly defined by brown, its inner edge somewhat excised; medial line

brown, oblique and with rather diffused chocolate-brown band on its outer edge from costa to median nervure, above which there is a black wedge-shaped mark beyond it before the reniform, then incurved; postmedial line fine, brown defined by whitish on outer side, oblique to vein 6, then minutely waved, slightly incurved at discal fold and below vein 4, a truncate conical patch beyond it on costal area with two white points on the costa; subterminal line

Fig. 63.—*Androlymnia torsivena*, ♂. ½.

whitish with slight black marks beyond it below the costa, angled outwards at vein 7, then minutely waved, angled inwards at discal fold and vein 2; a terminal series of black striæ slightly defined by whitish on inner side. Hind wing grey suffused with brown; the cilia with whitish points at base, wholly whitish towards tornus; the underside grey suffused and irrorated with brown, a slight discoidal bar and slightly waved postmedial line.

♀. Fore wing with truncate conical chocolate patch on middle of costa on outer side of medial line extending to inner side of reniform just above the black mark which is lunulate.

Hab. Gold Coast, Acropong Mts. (*Sir G. Carter*), 1 ♂, 1 ♀ type, C. Coast Castle (*Higlett*), 1 ♀; Lagos, Olokemeji (*Dudgeon*), 4 ♀; Natal, Victoria Distr. (*Gooch*), 1 ♀, Durban (*Leigh, Clarke*), 2 ♀; Cape Colony (*Sir A. Smith*), 1 ♂. *Exp.* 28–32 millim.

Sect. II. Fore wing of male normal.

A. Fore wing with the outer edge of the subterminal costal patch strongly indented ..... *clavata.*
B. Fore wing with the outer edge of the subterminal costal patch not indented ..... *emarginata.*

4535. Androlymnia clavata, n. sp. (Plate CXLI. fig. 25.)

♂. Head, thorax, and abdomen pale purplish grey slightly mixed with brown; palpi at sides and frons blackish; legs blackish, the tarsi with pale rings. Fore wing pale purplish-grey irrorated with chocolate-brown; subbasal line slight, sinuous, from costa to submedian fold; antemedial line indistinct, double, rather diffused, oblique from costa to submedian fold, then incurved; orbicular absent; reniform with faint whitish annulus and its centre defined by brown; an oblique wedge-shaped chocolate-brown patch from middle of costa to median nervure before the reniform, before the lower part of which there is a small black spot; a diffused incurved

blackish line from lower angle of cell to inner margin; postmedial line indistinct, defined by whitish on outer side, bent outwards below costa, excurved to vein 4, then strongly incurved and slightly angled outwards at vein 1, a triangular chocolate-brown patch beyond it from costa, its outer edge excised and its lower extremity produced to a point; subterminal line indistinct, whitish, angled outwards at vein 7, then minutely waved; a terminal series of minute black points and a small spot at apex. Hind wing grey suffused with brown; cilia whitish; the underside grey, tinged and irrorated with brown, a slight discoidal lunule, and rather diffused postmedial line.

Hab. Br. E. Africa, Taveta (*K. St. A. Rogers*), 1 ♂ type. *Exp.* 20 millim.

4536. Androlymnia emarginata.

Ozarba emarginata, Hmpsn. Ill. Het. B. M. viii. p. 76, pl. 145. f. 22 (1891); id. Moths Ind. ii. p. 333.

Head, thorax, and abdomen purplish grey mixed with some chocolate-brown, the thoracic crests dark-tipped; palpi and frons blackish; tarsi blackish with pale rings. Fore wing purplish grey irrorated and in parts suffused with chocolate-brown; a dark point at base of costa; antemedial line with dark point at costa, then indistinct and strongly excurved from below costa; a triangular chocolate-brown patch from middle of costa with a black spot at its apex above median nervure before the reniform, which has a fine brown outline, slightly constricted at middle; an incurved line from lower angle of cell to inner margin; postmedial line red-brown,

Fig. 64.—*Androlymnia emarginata*, ♂. ½.

oblique from costa to vein 6, incurved at discal fold and strongly below vein 4, a truncate chocolate-brown patch beyond it on costa, its inner and lower edges dentate and with some whitish points on costa; subterminal line pale slightly defined by brown on inner side, excurved below vein 7 and at middle, angled inwards at discal fold and incurved below vein 3; a terminal series of brown striæ; cilia red-brown at tips. Hind wing grey suffused with reddish brown; cilia with a pale line at base; the underside grey tinged and irrorated with red-brown, an indistinct diffused curved postmedial line.

Hab. Punjab, Simla (*Harford*), 1 ♂; Madras, Nilgiris (*Hampson*), 1 ♂, 1 ♀ type; Ceylon, Putlam (*Pole*), 2 ♀; Bali (*Doherty*), 1 ♂. *Exp.* 22–24 millim.

Genus CHALCOECIA, nov.

Type, *C. emessa*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint not reaching middle of frons and moderately fringed with scales in front, the 3rd short; frons with slight rounded prominence with slight transverse ridge at middle and corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with decumbent crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on 1st two segments. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a minute areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4537. Chalcoecia emessa.

Anthœcia emessa, Druce, Biol. Centr.-Am., Het. i. p. 300, pl. 28. f. 4 (1889).

♂. Head, thorax, and abdomen greyish suffused with rufous, the metathoracic crest purplish rufous, the abdominal crests bright rufous. Fore wing with the basal and terminal areas grey suffused with purple, the basal half of medial area and postmedial area olive tinged with cupreous, the outer half of medial area grey-white; antemedial line dark brown, curved; postmedial line red-brown,

Fig. 65.—*Chalcoecia emessa*, ♂. ½.

excurved from costa to vein 4, then oblique and bent outwards to inner margin; cilia white tinged with olive. Hind wing whitish suffused with fuscous brown, especially on terminal half; cilia brownish at base, whitish at tips.

Hab. Guatemala, Pantaleon (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 36 millim.

Genus CHRYSOECIA.

Type, *C. scira*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint not reaching middle of frons and moderately fringed with scales in front, the 3rd short; frons with slight rounded prominence with vertical ridge at middle and corneous plate below it; eyes large, round; antennæ of female ciliated; thorax clothed with hair and scales mixed, the prothorax without crest, the metathorax with decumbent crest; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6 7 from upper angle; 8 anastomosing with the cell near base only.

4538. Chrysoecia scira.

Anthœcia scira, Druce, Biol. Centr.-Am., Het. i. p. 301, pl. 28. f. 5 (1889).

♀. Head brown; tegulæ and patagia orange-fulvous; thorax whitish; pectus and legs tinged with ochreous, the fore legs brown, the tarsi brown with pale rings; abdomen brown, the ventral surface whitish tinged with ochreous. Fore wing olive-fulvous, the medial area suffused with brown from costa to submedian fold, the terminal area creamy white, the inner half of basal area, the medial area towards costa and inner margin and beyond the cell irrorated with silvery blue; antemedial line silvery blue, oblique

Fig. 66.—*Chrysoecia scira*, ♀. ½.

from costa to submedian fold, angled inwards on vein 1 and excurved above inner margin; orbicular and reniform olive-fulvous, indistinctly defined, the former round with silvery blue spot in centre, the latter with silvery blue line in centre; postmedial line represented by the curved waved edge of brown area from costa to vein 2, with silvery blue point on costa and double oblique striæ from inner margin, defined by an olive-fulvous band on outer side. Hind wing fuscous brown, the cilia whitish at tips; the underside whitish suffused and irrorated with brown.

Hab. Mexico, Guerrero (*H. H. Smith*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 34 millim.

Genus NICARA.

	Type.
Nikara, Moore, Lep. Atk. p. 126 (1882).....	*castanea.*

Proboscis fully developed; palpi upturned, short, the 2nd joint broadly scaled, the 3rd minute; frons smooth; eyes large, rounded; antennæ of male minutely ciliated; thorax clothed almost entirely with scales and without crests; tibiæ fringed with rather long hair on outer side; abdomen without crests. Fore wing rather short and broad, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4539. Nicara castanea.

Nikara castanea, Moore, Lep. Atk. p. 126, pl. 4. f. 24 (1882); Hmpsn. Moths Ind. ii. p. 233.

♂. Head and thorax dark brown irrorated with blue-grey; tarsi with pale rings; abdomen dark brown. Fore wing dark

brown irrorated with blue-grey to postmedial line, extending to median nervure and vein 2, the submedian fold except at base, the postmedial area and apex deep coppery red, the inner area pale rufous irrorated with blue-grey; the terminal area blue-grey; subbasal line absent; antemedial line indistinct, deep red, very oblique from costa to submedian fold, then obsolete; claviform absent; orbicular with red centre and blue-grey annulus, very narrow and extremely oblique; reniform very indistinct, its centre defined by brown and with faint blue-grey annulus; postmedial

Fig. 67.—*Nicara castanea*, ♂. ½.

line strong, black-brown, oblique from costa to vein 6, then excurved to vein 2 where it terminates, emitting streaks towards cell above and below veins 5 and 2, a patch of blue-grey irroration beyond it on costa; subterminal line blue-grey defined on each side by pale rufous, evenly curved and obsolete on costal and inner areas; cilia rufous. Hind wing very dark brown, the cilia grey at tips; the underside blue-grey thickly irrorated with brown, a brown discoidal lunule and diffused curved postmedial line.

Hab. Sikhim (*Pilcher*), 2 ♂. *Exp.* 40 millim.

Genus **APOCALYMNIA**, nov.

Type, *A. tenebrosa*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons with large corneous process with raised edges; eyes large, rounded; antennæ of female laminate; head and thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with slight crest; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen slightly waved and somewhat excised towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4540. Apocalymnia tenebrosa.

Caradrina tenebrosa, Hmpsn. J. Bomb. Soc. xiv. p. 204 (1902).

♀. Head and thorax purplish grey mixed with brown; palpi black at sides; frons fuscous at sides; pectus whitish, the tarsi black ringed with white; abdomen whitish irrorated with brown and dorsally tinged with brown. Fore wing purplish grey, irrorated with fuscous and suffused in parts with brown; subbasal

line represented by an oblique black striga from costa ; antemedial line very oblique and black from costa to median nervure, then very indistinct, minutely dentate and inwardly oblique ; orbicular absent ; reniform faintly defined by fuscous, somewhat constricted at middle ; medial line black and very oblique from costa to lower angle of cell, then indistinct, diffused and inwardly oblique ; postmedial line black and very oblique from costa to vein 6, then reduced to slight streaks and dentate marks, excurved to vein 4, then oblique ; a dark brown patch on postmedial part of costa with

Fig. 68.—*Apocalymnia tenebrosa*, ♀. ½.

some pale points on costa ; subterminal line hardly traceable, minutely dentate, with diffused blackish streaks beyond it above and below vein 5 ; a series of minute black points just before termen ; cilia fuscous intersected with grey. Hind wing whitish tinged with ochreous, the terminal area suffused with brown especially on the veins ; cilia brownish with fine pale line at base and whitish tips ; the underside with the costal and terminal areas irrorated with brown, a blackish discoidal spot.

Hab. Madras, Cuddapah, Horsleykonda (*Campbell*), 1 ♀ type. *Exp.* 30 millim.

Genus **HYPERCALYMNIA**, nov.

Type, *H. metaxantha*.

Proboscis fully developed ; palpi obliquely upturned, short, hardly reaching to middle of frons and slightly fringed with hair in front ; frons with rounded corneous prominence with raised edges and corneous plate below it ; eyes large, round ; antennæ of male laminate and almost simple ; thorax clothed with rough hair and scales mixed, the pro- and metathorax with spreading crests ; tibiæ slightly fringed with hair ; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate ; veins 3 and 5 from near angle of cell ; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell ; 5 obsolescent from just below middle of discocellulars ; 6, 7 from upper angle ; 8 anastomosing with the cell near base only.

4541. **Hypercalymnia metaxantha**, n. sp.

♂. Head yellowish white ; antennæ tinged with rufous ; thorax pale yellow mixed with rufous ; abdomen pale rufous tinged with brown, the ventral surface whitish. Fore wing yellowish white ; the basal area irrorated with rufous and brownish ; an oblique diffused fuscous line from upper angle of cell to inner margin, with

whitish band before it and brownish suffusion beyond it; post-medial line whitish, oblique from costa to discal fold, then inwardly oblique to submedian fold and bent outwards to inner margin, some brownish suffusion beyond it on costal area; the

Fig. 69.—*Hypercalymnia metaxantha*, ♂. ½.

terminal area rufous with an ill-defined oblique whitish bar across apex; a terminal series of slight brownish points; cilia brownish white. Hind wing pale yellow.

Hab. Congo, Katanga Distr. (*Neave*), 1 ♂ type. *Exp.* 34 millim.

Genus **MUSOTHYMA.**

Type.

Musothyma, Meyr. Trans. Ent. Soc. 1897, p. 375..... *cyanastis.*

Proboscis fully developed; palpi slender, upturned to above vertex of head; frons with rounded prominence with small corneous plate below it; eyes smooth; antennæ of male minutely ciliated; thorax smoothly scaled; abdomen with dorsal crests on 1st three segments, the crest on 3rd segment large, the male with large lateral tufts at base from edge of stigmata. Fore wing with veins 3 and 5 from near angle of cell; 6, 7 from upper angle; 8, 9 stalked; 10, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

*4542. Musothyma cyanastis.

Musothyma cyanastis, Meyr. Trans. Ent. Soc. 1897, p. 375.

♂. Head and tegulæ pale ochreous, the 3rd joint of palpi and frons above black; thorax olive-brown; abdomen olive-brown, whitish below. Fore wing brownish ochreous thickly irrorated

Fig. 70.—*Musothyma cyanastis*, ♂. ½.

with large black scales to the postmedial line; a slate-coloured fascia on inner margin, bent upwards on inner side of postmedial line to vein 2 where it is met by an obscure diffused oblique blackish band from middle of costa; postmedial line whitish,

oblique from costa to vein 6, excurved to vein 4, then strongly incurved; a slate-coloured wedge-shaped mark, oblique from costa before apex to near termen at vein 5, its edges defined by whitish; ill-defined dark streaks on terminal area on veins 5 and 2; an incurved whitish subterminal line towards inner margin. Hind wing yellowish, the terminal area strongly and the inner area slightly suffused with fuscous brown.

Hab. Queensland, Townsville (*Dodd*), in Coll. Turner. *Exp.* 32 millim.

Genus **CALYMNIA.**

	Type.
Calymnia, Hübn. Verz. p. 235 (1827)	*trapezina.*
Eustegnia, Hübn. Verz. p. 236 (1827)	*diffinis.*
Euperia, Guen. Ann. Soc. Ent. Fr. 1839, p. 486	*trapezina.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately scaled in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male laminate and ciliated; thorax smoothly clothed with hair and hair-like scales and without crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base and lateral fringes of hair but without crests. Fore wing with the apex somewhat produced and acute, the termen nearly straight to vein 4, then oblique, typically not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial line obliquely downcurved from costa to vein 6.
  a. Fore wing with wedge-shaped white patch on costa at postmedial line.
    a^1. Fore wing with oblique quadrate white patch from costa at antemedial line with outwardly oblique white point from its lower extremity ..... *restituta*
    b^1. Fore wing with small triangular white patch from costa at antemedial line, its lower extremity bent inwards... *diffinis.*
  b. Fore wing without wedge-shaped white patch on costa at postmedial line.
    a^1. Fore wing with chocolate-brown patch beyond the cell extending to costa before and beyond the postmedial line which is strong and white on costal area ..... *cara.*
    b^1. Fore wing without chocolate-brown patch beyond the cell.
      a^2. Fore wing with the postmedial line oblique from vein 4 to inner margin near tornus ..... *ethiopica.*
      b^2. Fore wing with the postmedial line not oblique from vein 4 to near tornus.
        a^3. Fore wing with the antemedial line oblique, waved. *pyralina.*
        b^3. Fore wing with the antemedial line angled outwards below costa, then oblique to inner margin. *affinis.*
        c^3. Fore wing with the antemedial line angled outwards below costa and excurved on inner area ... *flavifimbria.*
        d^3. Fore wing with the antemedial line oblique from costa to above inner margin to which it is bent inwards ..... *camptostigma.*
        e^3. Fore wing with the antemedial line oblique throughout.. ..... *unicolora.*

B. Fore wing with the postmedial line oblique from costa to vein 6.
  a. Fore wing with the postmedial line minutely waved below vein 6.
    a^1. Head, thorax, and fore wing creamy white ..... *jancousci.*
    b^1. Head, thorax, and fore wing suffused with red-brown or dark brown.
      a^2. Fore wing with the lines whitish ..... *achatina.*
      b^2. Fore wing with the lines dark ..... *ochreimargo.*
  b. Fore wing with the postmedial line not waved.
    a^1. Hind wing yellow, the terminal area suffused with fuscous ..... *moderata.*
    b^1. Hind wing wholly suffused with fuscous brown..... *exigua.*
    c^1. Hind wing more or less strongly tinged with fuscous brown, the costal area yellow ..... *trapezina.*
    d^1. Hind wing white or yellowish white.
      a^2. Fore wing pale yellow without pinkish and olive-green tinge.
        a^3. Fore wing with the ante- and postmedial lines defined by pale yellow ..... *orina.*
        b^3. Fore wing with the ante- and postmedial lines not defined by yellow ..... *subtilis.*
      b^2. Fore wing greyish suffused with pinkish and olive-green ..... *olivescens.*
C. Fore wing with the postmedial line slightly angled outwards below costa, then oblique and almost straight.
  a. Fore wing olive-brown with the lines strong, grey ..... *bifasciata.*
  b. Fore wing chocolate-red, the costal area suffused with violaceous grey, the lines fine ..... *gemmella.*

4543. Calymnia restituta.

Cosmia restituta, Wlk. x. 490 (1856); Hmpsn. Moths Ind. ii. p. 321; Staud. Cat. Lep. pal. p. 203.
Calymnia picta, Staud. Stett. ent. Zeit. 1888, p. 257; id. Rom. Mém. vi. p. 503, pl. 10. f. 2.

Head and thorax grey-brown; palpi and fore coxæ white in front; pectus whitish; abdomen grey-brown with slight whitish segmental rings, the ventral surface white, the anal tuft tinged with rufous. Fore wing grey-brown, the inner area greyer; subbasal line represented by an oblique pure white bar defined by brown from costa to median nervure; antemedial line with oblique white patch from costa defined by brown, acutely angled outwards below costa and slightly inwards on median nervure, with oblique white bar from its lower extremity ending in a small rounded spot above submedian fold and with slight oblique dark line from it to inner margin; orbicular indistinct, yellowish with some rufous in centre, round; reniform a faint yellowish bar defined by brown on inner side and with some fuscous on outer side; two widely separated brown postmedial lines, oblique from costa to vein 6 and inwardly oblique below vein 5, with an oblique triangular pure white patch beyond it from costa, bent outwards at lower extremity; subterminal line faint, greyish slightly defined by brown on inner side and with oblique white striga on it from costa, excurved below vein 7 and at middle and bent outwards to tornus; cilia with a

faint greyish line at base. Hind wing with the basal half grey-brown, the terminal half fuscous brown; an indistinct dark discoidal lunule; cilia pure white; the underside white tinged and irrorated with reddish brown, a dark discoidal lunule and rather diffused curved postmedial line, the area beyond it suffused with fuscous from vein 6 to tornus.

Ab. 1, *picta*. Head and thorax bright rufous; fore wing bright rufous, the inner area pinkish, the terminal area suffused with brown, the orbicular and reniform more distinct.

Fore wing with the termen and cilia crenulate towards tornus.

Hab. E. Siberia, Ussuri; Japan, Yesso (*Pryer*), 1 ♀; Punjab, Murree (*Harford*), 3 ♂, 1 ♀; Nepal (*Hardwicke*), 1 ♂ type. *Exp.* 32–36 millim.

4544. Calymnia diffinis.

Noctua diffinis, Linn. Syst. Nat. ed. xii. p. 848 (1767); Esp. Schmett. iv. pl. 134. f. 2; Hübn. Eur. Schmett., Noct. f. 202; Dup. Lép. Fr. vii. pt. 1, p. 116, pl. 108. f. 4; Steph. Ill. Brit. Ent., Haust. iii. p. 60; Frr. Neue Beitr. pl. 130; Staud. Cat. Lep. pal. p. 203.

Cosmia confinis, Herr.-Schäff. Schmett. Eur. ii. p. 224, Noct. f. 450 (1845).

Head and thorax bright chestnut-red; palpi pale brown, white in front towards base; antennæ brown, the shaft ringed with white towards base; tegulæ slightly edged with white; pectus white; tarsi ringed with white; abdomen pale brown with slight grey segmental rings, anal tuft rufous, the ventral surface white tinged with rufous towards extremity. Fore wing bright chestnut-red, the inner area pinkish to antemedial line, the inner half of medial and postmedial areas and the terminal area rather paler red; subbasal line pure white, oblique, from costa to median nervure; antemedial line with wedge-shaped white mark from costa defined by brown, its lower extremity bent inwards in cell, with very oblique brown line defined on inner side by pinkish from it to inner margin; faint traces of a small round orbicular and of a reddish reniform defined by brown; a rather diffused brown medial line oblique from costa to lower angle of cell, then incurved; postmedial line with pure white triangular patch from costa to vein 6, bent outwards at lower extremity and with oblique slightly incurved dark line defined by pinkish white on outer side from it to inner margin, two white points beyond it on costa and a diffused blackish streak from its angle to subterminal line, which is white towards costa, then pinkish white, slightly angled outwards at vein 7 and excurved at middle; two small subapical black spots and some minute blackish points on apical half of termen; cilia with a fine pinkish line through them. Hind wing greyish suffused with yellow-brown, the terminal area darker; cilia whitish tinged with rufous at base and with slight rufous line through them; the underside yellowish white slightly tinged with brown and the costal area irrorated with rufous, a small dark discoidal spot, rather diffused sinuous postmedial line from costa to submedian fold, and diffused subterminal band.

Ab. 1. *confinis*. Fore wing much paler.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller and Fry Colls.; Austria; Hungary, Leech Coll.; Switzerland; Spain; Italy; Greece, Merlin Coll.; Turkey; S. Russia, Sarepta; Asia Minor, Pontus, Bithynia, Lydia; Syria. *Exp.* 32–38 millim.

Larva. Meyr. Brit. Lep. p. 117; Barrett, Lep. Brit. v. p. 322, pl. 225. f. 1. Green; dorsal line ochreous whitish; subdorsal line irregular, whitish with darker edges; spiracular line pale yellow; dots ochreous whitish; head very dark brown. Food-plant: Elm. 5–6.

4545. Calymnia cara. (Plate CXLI. fig. 26.)

Dyrzela cara, Butl. Trans. Ent. Soc. 1881, p. 188.
Calymnia penicillata, Græs. Berl. ent. Zeit. xxxv. p. 75 (1890); Staud. Cat. Lep. pal. p. 203.

Head and thorax rufous slightly tinged with grey: pectus greyer; abdomen pale grey-brown. Fore wing rufous with slight pale irroration, the medial area tinged with pink except towards costa and inner margin; a slight oblique brownish subbasal line defined by pink on outer side, from costa to submedian fold; antemedial line brown defined by pink on inner side, very oblique, straight; orbicular represented by a dark point, the reniform a blackish lunule with deep chestnut-red patch beyond it extending to postmedial line and with deep rufous suffusion from it to costa before and beyond postmedial line; an indistinct incurved brown line from lower angle of cell to inner margin; postmedial line brown defined on outer side by pure white towards costa, then by pink, obliquely downcurved from costa to vein 6, then oblique and slightly sinuous; a diffused oblique pink shade from apex to middle of postmedial line with prominent elliptical black subapical spot on it with black points above and below it. Hind wing greyish suffused with yellow-brown; cilia white with a brown line near base and faintly tinged with pink at apex; the underside grey slightly tinged with brown, the costal and apical areas with pink, a slight discoidal bar and curved minutely waved postmedial line from costa to submedian fold.

Hab. E. Siberia, Amurland, Raddé, type † ♂ *penicillata* in Coll. Püngeler; Japan, Tokio (*Fenton*), 1 ♀ type. *Exp.* 30 millim.

4546. Calymnia ethiopica.

Calymnia ethiopica, Hmpsn. Trans. Zool. Soc. xix. p. 107, pl. iv. f. 14 (1909).

♀. Head and thorax rufous mixed with grey-white; palpi brown, whitish towards tips; antennæ brown, whitish at base; pectus and legs whitish mixed with fuscous brown. Abdomen dark brown slightly mixed with greyish. Fore wing ochreous suffused with rufous and slightly irrorated with blackish, the veins slightly streaked with blackish; subbasal line represented by a slight dark striga from costa; antemedial line black defined by

whitish on inner side, nearly erect and slightly incurved from subcostal nervure to vein 1; orbicular a dark point, the reniform a small lunule faintly defined by blackish; a rather diffused oblique sinuous fuscous medial line; postmedial line black defined by white on outer side, very oblique and ending near tornus, excurved from below costa to vein 4, the area beyond it whitish irrorated with fuscous to the subterminal line, which is whitish defined on inner side by fuscous suffusion between veins 6 and 3, slightly excurved below vein 7 and ending at tornus; a dark brown terminal line; cilia pale yellow at base, brownish at tips. Hind wing whitish suffused with reddish brown; a large dark discoidal lunule and traces of a curved postmedial line; some dark points on termen; cilia pale yellow at base, brownish at tips; the underside whitish irrorated with dark brown, a large black-brown discoidal lunule, curved postmedial line and terminal series of small lunules.

Hab. Uganda, Ruwenzori, 6000 feet (*Legge*), 1 ♀ type. *Exp.* 30 millim.

4547. Calymnia pyralina.

Noctua pyralina, Schiff. Wien Verz. p. 88 (1776); View. Tab. Verz. ii. p. 87 (1789); Hübn. Eur. Schmett., Noct. f. 203; Dup. Lép. Fr. vii. pt. 1, p. 122, pl. 108. f. 6; Steph. Ill. Brit. Ent., Haust. iii. p. 61; Frr. Neue Beitr. pl. 129; Staud. Cat. Lep. pal. p. 203.
Noctua corusca, Esp. Schmett, iv. pl. 135. ff. 4, 5 (1788).

Head and thorax bright chestnut-red; pectus greyish; tibial spurs whitish, the tarsi with slight pale rings; abdomen pale grey-brown, the anal tuft rufous, the ventral surface whitish tinged with rufous. Fore wing bright chestnut-red; traces of an oblique brownish subbasal line from costa to submedian fold; antemedial line brown, slightly defined on inner side by yellowish towards costa, oblique, sinuous; orbicular and reniform hardly traceable, the former round with minute black point in centre, the latter with slight dark lunule; medial line dark, rather diffused, oblique from costa to vein 6 well beyond the cell, oblique and minutely waved below vein 4; postmedial line brown defined by white on outer side from costa to vein 4, very oblique to vein 6, oblique and slightly incurved below vein 5, some white irroration beyond it on costal area; subterminal line white and oblique towards costa, angled outwards at vein 7, then indistinct, pale, incurved to postmedial line at discal fold; two small black subapical spots followed by a terminal series of black points; cilia with a slight dark line through them. Hind wing whitish ochreous tinged with brown especially on terminal area; the termen slightly and cilia pale yellow tinged with rufous on apical half; the underside yellowish white, the costal area tinged and irrorated with rufous, a slight dark discoidal lunule and curved sinuous postmedial line from costa to submedian fold.

Ab. 1. Head, thorax, and fore wing browner.

Hab. Britain, Leech Coll.; France, Leech Coll.; Germany,

Zeller, Frey, and Leech Colls.; Austria; Hungary, Leech Coll.; Switzerland, Frey Coll.; Italy; Algeria (*Mrs. Nicholl*); Scandinavia; S.W. Russia; Armenia; E. Siberia, Ussuri; Japan, Yesso (*Pryer*), 1 ♂, 1 ♀. *Exp.* 30–40 millim.

Larva. Meyr. Brit. Lep. p. 117; Barrett, Lep. Brit. v. p. 319, pl. 224. f. 2. Yellowish green irrorated with yellowish white; dorsal line yellowish white tinged with pink at extremities; subdorsal line formed of yellowish-white dots, interrupted; spiracular line greenish white; head ochreous irrorated with red-brown. Food-plants: Pear, Plum. 4–5.

4548. Calymnia affinis.

Noctua affinis, Linn. Syst. Nat. ed. xii. p. 848 (1767); Esp. Schmett. iv. pl. 134. f. 1; Hübn. Eur. Schmett., Noct. f. 201; Dup. Lép. Fr. vii. pt. 1, p. 119, pl. 108. f. 5; Steph. Ill. Brit. Ent., Haust. iii. p. 61; Staud. Cat. Lep. pal. p. 203.
Noctua palliata, Fabr. Ent. Syst. iii. pt. 2, p. 38 (1793).

Head and thorax bright rufous slightly mixed with grey; palpi white irrorated with fuscous; antennæ fuscous ringed with white towards base; pectus and legs white, the latter irrorated with brown; abdomen grey-brown with slight yellowish segmental rings, the ventral surface white tinged with rufous towards extremity. Fore wing bright rufous, with slight dark irroration; subbasal line indistinct, pale, oblique, from costa to submedian fold; antemedial line fuscous defined by whitish on inner side especially towards costa, slightly excurved below costa, then very oblique; orbicular and reniform hardly traceable, the former round with black point in centre, the latter with two blackish points in centre; medial line rather diffused, blackish, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line brown defined by whitish on outer side, oblique from costa to vein 6, then inwardly oblique, two slight whitish striæ beyond it from costa; subterminal line indistinct, pale, whitish towards costa, slightly defined by brown on inner side, excurved below vein 7 and at middle; two small subapical black spots followed by a terminal series of minute points. Hind wing greyish suffused with brown, the terminal area broadly black-brown; cilia bright yellow tinged with fuscous at base towards apex and tornus; the underside whitish tinged with fuscous, the costal area and apical part of termen yellow, a faint diffused medial dark band, blackish discoidal lunule, and oblique postmedial line with the area beyond it black from vein 6 to tornus.

Ab. 1. Fore wing with some whitish suffusion beyond postmedial line on costal area.

Ab. 2. Fore wing much greyer brown with hardly any rufous suffusion, with or without white suffusion beyond postmedial line.

Ab. 3. Similar, but fore wing with patches of black suffusion.

Hab. Britain, Leech Coll.; France, Zeller and Sand Colls.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary, Leech Coll.; Switzerland; Spain; Italy; Greece; Algeria; Scandinavia;

Armenia; W. Turkestan, Turcomania; Japan, Oiwake (*Pryer*), 1 ♂, 1 ♀, Kiushiu, 1 ♀, Yokohama (*Jonas, Manley, Pryer*), 1 ♂, 4 ♀. *Exp.* 32–40 millim.

Larva. Meyr. Brit. Lep. p. 117; Barrett, Lep. Brit. v. p. 325, pl. 225. f. 2.

Green; dorsal and subdorsal lines white; spiracular line yellowish white, sometimes dark-edged above; dots white; head yellowish green. Food-plant: Elm. 5–6.

4549. Calymnia flavifimbria, n. sp. (Plate CXLI. fig. 27.)

Cosmia affinis, Hmpsn. Moths Ind. ii. p. 321, part. (nec Linn.).

Head and thorax red-brown mixed with ochreous; pectus whitish tinged with brown, the tarsi with whitish rings; abdomen ochreous white suffused with brown, the anal tuft yellow tinged with rufous. Fore wing greyish ochreous irrorated and in parts suffused with yellow-brown; subbasal line indistinct, whitish, from costa to submedian fold; antemedial line brown defined by white on inner side, oblique, slightly angled outwards below costa and excurved below submedian fold; orbicular and reniform indistinct, ochreous tinged with rufous, the former round with dark point in centre, the latter defined by diffused brown; a diffused brown medial line oblique from costa to reniform and incurved below the cell; postmedial line brown defined by white on outer side, oblique from costa to vein 6 and incurved below vein 4; subterminal line indistinct, pale defined by brown suffusion on inner side, angled outwards at vein 7 and inwards to postmedial line at discal fold, excurved at middle and bent outwards to tornus; cilia ochreous tinged with rufous. Fore wing ochreous tinged with brown, the terminal area broadly fuscous; cilia bright yellow; the underside yellow, traces of a sinuous medial shade, a slight blackish discoidal lunule, a slightly curved postmedial line, the area beyond it suffused with black from vein 7 to tornus.

Hab. Kashmir, Goorais Valley (*Leech*), 1 ♂ type; Punjab, 1 ♀. *Exp.* 40 millim.

4550. Calymnia camptostigma.

Heliothis camptostigma, Mén. Bull. de l'Acad. St. Pétersb. xvii. p. 219 (1859); id. Schrenck, Reis. Amurl. pl. 5. ff. 1, 2; Staud. Cat. Lep. pal. p. 203.

Cosmia distincta, Butl. A. M. N. H. (5) i. p. 192 (1878); id. Ill. Het. B. M. ii. p. 32, pl. 31. f. 2; Oberth. Ét. Ent. vi. p. 19, pl. 9. f. 7.

Head and thorax red-brown tinged with grey-white especially on head; palpi with the 2nd joint red-brown at sides; abdomen grey-brown, the anal tuft tinged with rufous. Fore wing grey suffused with rufous and irrorated with black especially on antemedial area, outer half of medial area and postmedial area; subbasal line blackish defined by white on outer side, excurved below costa and ending at median nervure; antemedial line blackish defined by white on inner side, oblique from costa to vein 1 and bent inwards to inner margin; orbicular represented by traces of

a minute whitish annulus, the reniform by a small black spot at lower angle of cell; a diffused fuscous-brown medial shade oblique from costa to beyond lower angle of cell, then incurved; post-medial line brown defined by white on outer side, obliquely incurved from costa to vein 6 and incurved below vein 5; subterminal line yellowish white slightly defined by blackish suffusion on inner side and with blackish patch before it on costa, excurved below vein 7 and at middle and angled inwards in discal fold; a terminal series of brown striæ; cilia with a fuscous line through them. Hind wing reddish brown, the terminal area broadly suffused with fuscous; the termen narrowly and cilia bright yellow; the underside yellowish white slightly tinged with fuscous on inner area, a diffused sinuous black postmedial line obsolescent towards costa and with blackish suffusion beyond it on inner half.

Ab. 1. Fore wing greyer with hardly any dark irroration.

Ab. 2. Fore wing with the medial area bright rufous.

Ab. 3. Fore wing wholly suffused with bright rufous.

Hab. E. Siberia, Amurland, 1 ♂, 1 ♀, Chabarofka, 2 ♂, 3 ♀; Japan, Hakodaté, 1 ♀, Tokio (*Fenton*), 2 ♂, Yokohama (*Jonas, Pryer, Manley*), 4 ♂, 2 ♀; China. *Exp.* 36–40 millim.

4551. **Calymnia unicolora.** (Plate CXLI. fig. 28.)

Calymnia unicolor, Staud. Rom. Mém. vi. p. 502 (1892); id. Cat. Lep. pal. p. 203.

♀. Head and thorax red-brown mixed with greyish ochreous; antennæ ringed with ochreous; tarsi with slight pale rings; abdomen red-brown mixed with greyish, the anal tuft ochreous tinged with rufous, the ventral surface paler. Fore wing red-brown irrorated with ochreous and grey: subbasal line indistinct, brown defined by grey on outer side, oblique, from costa to submedian fold; antemedial line brown defined by grey on inner side, very oblique, straight; orbicular a minute ochreous annulus with blackish point in centre; reniform a very indistinct ochreous mark, somewhat constricted at middle and with slight dark point in lower part; medial line brown, indistinct and somewhat diffused, oblique from costa to reniform and inwardly oblique from lower angle of cell to inner margin at antemedial line; postmedial line brown defined by grey on outer side, oblique from costa to vein 6, then inwardly oblique and almost straight, some ochreous points beyond it on costa; subterminal line indistinct, pale, excurved below vein 7 and at middle; a terminal series of black points; cilia with slight ochreous lines at base and middle. Hind wing greyish suffused with brown, the terminal area broadly fuscous; a small blackish discoidal lunule; cilia bright yellow with slight brown line near base on apical half and towards tornus; the underside ochreous whitish, the costal area irrorated with brown, a blackish discoidal lunule and oblique postmedial line, the area beyond it suffused with fuscous from vein 6 to tornus.

Hab. E. Siberia, Amurland, 1 ♀, Ussuri. *Exp.* 34 millim.

*4552. Calymnia jancousci.

Eugraphia jankowskii, Oberth. Ét. Ent. x. p. 25, pl. 3. f. 8 (1884); Staud. Cat. Lep. pal. p. 203.

Head and thorax white tinged with ochreous; antennæ black with the basal joint yellowish; legs pale yellow, the tarsi with black points; abdomen orange-yellow, whitish at base. Fore wing creamy white irrorated with grey except on inner and apical areas; subbasal line represented by a blackish striga from costa; antemedial line represented by a black striga from costa, then slight and excurved; orbicular yellowish defined by black, small, round; reniform a white patch with black point in centre; a black striga from middle of costa; postmedial line very indistinct, oblique from costa to vein 6, then minutely waved, excurved to vein 4, then incurved, some black points beyond it on costa; traces of some dark subterminal points; cilia with a series of black points at tips. Hind wing orange-yellow; a medial black line from below costa to submedian fold; a black subterminal band with sinuous edges from below apex to above tornus towards which it narrows. Underside of fore wing yellow, the costal and apical areas white, a blackish antemedial striga from costa, two discoidal bars, a postmedial striga from costa and a diffused band from below costa to above tornus, some black points on apical part of costa; hind wing with sinuous medial line and black postmedial line from costa to the subterminal band which arises at vein 6.

Hab. E. Siberia, Amurland, Sidemi. *Exp.* 42 millim. This species is unknown to me.

4553. Calymnia achatina. (Plate CXLI. fig. 29.)

Cosmia achatina, Butl. A. M. N. H. (5) iv. p. 365 (1879).

♂. Head and thorax reddish brown largely mixed with grey; tarsi ringed with white; abdomen red-brown, the ventral surface whitish irrorated with brown. Fore wing greyish tinged with red-brown and irrorated with dark brown; subbasal line grey, waved, from costa to submedian fold; antemedial line grey-white, oblique, irregularly waved; orbicular small, round, whitish slightly defined by brown and with some rufous in centre; reniform with greyish annulus and whitish bar on inner side, defined by brown and with some blackish in centre; an indistinct diffused brown bar from costa to reniform and waved line from lower angle of cell to inner margin; postmedial line grey-white slightly defined on each side by brown, oblique from costa to vein 6, then minutely dentate, inwardly oblique to submedian fold, then slightly bent outwards; subterminal line whitish, slightly defined on inner side by brown and with black-brown bar before it from costa, excurved below vein 7 and at middle and bent outwards to tornus; a terminal series of black spots slightly defined by whitish on inner side; cilia with a

slight dark line through them. Hind wing dark red-brown; cilia yellowish white with a red-brown line through them; the underside red-brown tinged with greyish at base and on inner area and the costal area irrorated with grey, and indistinct dark discoidal spot and diffused dark postmedial line from costa to vein 4.

Ab. 1. Fore wing darker, the lines less distinct.

♀. Underside of hind wing ochreous greyish, the black discoidal spot, sinuous postmedial line, and subterminal shade distinct.

Ab. 2. Fore wing pale greyish ochreous tinged with rufous, the white lines distinct; hind wing ochreous yellow, the terminal area fuscous black.

Hab. Japan, Oiwaké (*Pryer*), 1 ♀, Yokohama (*Pryer*), 2 ♂, 4 ♀ type. *Exp.* 32–36 millim.

4554. Calymnia ochreimargo. (Plate CXLI. fig. 30.)

Caradrina ochreimargo, Hmpsn. Moths Ind. ii. p. 264 (1894).

♂. Head and thorax rufous with a slight greyish tinge; pectus paler; legs tinged with brown; abdomen greyish brown, the anal tuft rufous, the ventral surface ochreous tinged with rufous and irrorated with some black scales. Fore wing greyish suffused with rufous and slightly irrorated with black; traces of a brownish subbasal line from costa to submedian fold; antemedial line indistinct, brown, very oblique and nearly straight; orbicular and reniform represented by faint ochreous marks; an indistinct diffused red-brown medial line, oblique from costa to lower angle of cell, then inwardly oblique to the antemedial line at inner margin; postmedial line brown slightly defined by whitish on outer side, very minutely waved, oblique from costa to vein 6 and slightly incurved below vein 3; subterminal line indistinct, pale, slightly defined on inner side by brown and with triangular brown shade before it on costa, oblique towards costa, excurved below vein 7 and at middle; a terminal series of small black spots; cilia rufous with brown line at middle and brown tips. Hind wing orange-yellow, the basal area slightly tinged with fuscous below the cell; a sinuous postmedial line with broad fuscous band beyond it leaving the termen and cilia yellow; the underside yellow tinged with rufous, a diffused fuscous postmedial line, obsolescent and rufous towards costa, incurved below vein 2 and bent outwards to tornus.

♀. Hind wing with the basal area greyish suffused with fuscous, the termen with slight yellow marks.

Hab. Punjab, Deobari (*Stebbing*), 1 ♂; Sikhim, 7000′ (*Pilcher*), 1 ♀. *Exp.* ♂ 42, ♀ 48 millim.

4555. Calymnia moderata.

Calymnia moderata, Staud. Stett. ent. Zeit. 1888, p. 257; id. Rom. Mém. vi. p. 504, pl. 10. f. 1; id. Cat. Lep. pal. p. 203.
Calymnia grandifica, Græs. Berl. ent. Zeit. 1888, p. 356.

♂. Head, thorax, and abdomen pale brownish ochreous; pectus

and legs whitish slightly irrorated with brown. Fore wing pale brownish ochreous with slight dark irroration, the terminal area slightly suffused with brown except at apex; subbasal line absent; antemedial line pale brown, very oblique, straight; orbicular and reniform absent; a rather diffused curved brown medial line, anastomosing with the antemedial line at inner margin; postmedial line brown, oblique from costa to vein 6, then inwardly oblique and almost straight; subterminal line indistinct, pale slightly defined by brown on inner side and with slight brownish triangular mark before it on costa, very slightly excurved below vein 7 and at middle and bent outwards to tornus; cilia red-brown at base, brownish ochreous at tips. Hind wing pale ochreous yellow; a sinuous fuscous postmedial line, angled outwards at vein 4, the area beyond it suffused with fuscous, leaving the termen and cilia bright ochreous; the underside pale ochreous yellow with faint diffused postmedial line incurved below vein 2, the cilia reddish.

Hab. E. Siberia, Amurland, 1 ♂, Ussuri. *Exp.* 38 millim.

4556. Calymnia exigua. (Plate CXLI. fig. 31.)

Mesogona exigua, Butl. Trans. Ent. Soc. 1881, p. 182.
Calymnia saturata, Staud. Rom. Mém. vi. p. 504 (1892); id. Cat. Lep. pal. p. 204.

Head and thorax ochreous suffused with rufous; antennæ blackish towards tips; abdomen ochreous tinged with brown. Fore wing ochreous suffused with rufous and slightly irrorated with brown; subbasal line brownish, from costa to submedian fold; antemedial line brown, very oblique and slightly incurved in cell; orbicular with very faint yellowish annulus defined by a few brown scales, round; reniform rufous slightly defined by brown and with small blackish spot in lower part, narrow, oblique; a diffused brown medial shade, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line dark brown slightly defined by yellowish on outer side, oblique from costa to vein 6, inwardly oblique below vein 4; faint traces of a yellowish subterminal line, oblique towards costa and very slightly excurved below vein 7 and at middle; a terminal series of small black spots; cilia rufous, brownish at tips. Hind wing ochreous uniformly suffused with brown; a slight dark discoidal point; cilia yellow; the underside yellowish white slightly tinged with brown, a dark discoidal spot, rather diffused and slightly waved postmedial line incurved below vein 2, a terminal series of dark striæ.

Hab. E. Siberia, Amurland, Ussuri; Japan, Yesso (*Pryer*, *Andrewes*), 2 ♂, 2 ♀, Oiwaké (*Pryer*), 1 ♀, Tokio (*Fenton*), 1 ♂ type; W. China, Chang-yang (*Pratt*), 1 ♂. *Exp.* 36–42 millim.

4557. Calymnia trapezina.

Noctua trapezina, Linn. Syst. Nat. ed. x. p. 510 (1758); Esp. Schmett. iv. pl. 87. ff. 2, 3; Hübn. Eur. Schmett., Noct. f. 200; Dup. Lép. Fr. vii. pt. 1, p. 113, pl. 108. ff. 1, 3; Steph. Ill. Brit. Ent., Haust. iii. p. 62; Frr. Neue Beitr. pl. 624; Staud. Cat. Lep. pal. p. 204.
Calymnia badiofasciata, Teich. Stett. ent. Zeit. 1883, p. 173.
Calymnia obscura, Auriv. Nord. Fjär. p. 161 (1888).

Head and thorax ochreous tinged with rufous and slightly mixed with brown; pectus and legs whitish tinged with brown; abdomen ochreous slightly tinged with brown; the anal tuft tinged with rufous. Fore wing ochreous irrorated with brown, the basal and postmedial areas suffused with whitish, the medial and terminal areas with rufous; subbasal line faint, brownish, from costa to submedian fold; antemedial line brown defined by white on inner side, very oblique and almost straight; orbicular and reniform with rufous centres and yellow annuli faintly defined by fuscous, the former small, round, the latter narrow, its upper extremity somewhat bent outwards and with a small black spot in lower extremity; an indistinct diffused red-brown medial line, oblique from costa to lower angle of cell, then inwardly oblique; postmedial line white slightly defined on each side by brown, oblique from

Fig. 71.—*Calymnia trapezina*, ♂. ½.

costa to vein 6, inwardly oblique below vein 4; subterminal line yellowish, slightly defined on inner side by brown especially on costal area, oblique towards costa and very slightly excurved at vein 7 and middle; a terminal series of slight dark points; cilia rufous tinged with brown. Hind wing ochreous suffused with brown especially on terminal area; a terminal series of dark striæ; cilia yellow with a brown line through them; the underside whitish tinged with brown, the costal area tinged with yellow and irrorated with brown, the terminal area suffused and irrorated with brown, a brown discoidal lunule and sinuous postmedial line except on inner area.

Ab. 1. Fore wing with the ground-colour bright rufous.

Ab. 2. Fore wing pale yellow slightly tinged with rufous, especially on medial area.

Ab. 3. Fore wing ochreous white slightly suffused with brown especially on medial area.

Ab. 4. Fore wing ochreous white irrorated but not suffused with brown.

Ab. 5. *badiofasciata*. Fore wing with the medial area fuscous or blackish.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; Corsica (*Yerbury*); Italy; Greece; ? Algeria; Russia, Livonia, Zeller Coll.; Armenia; Asia Minor, Pontus, Bithynia. *Exp.* 32–42 millim.

Larva. Meyr. Brit. Lep. p. 117; Barrett, Lep. Brit. v. p. 317, pl. 224. f. 1. Pale green; dorsal and subdorsal lines narrow, yellowish white; spiracular line broad, yellowish white, sometimes edged above with blackish grey; spots white with black centres; head green. Food-plants: Oak, Elm, *Salix*, etc., but usually carnivorous feeding on other caterpillars. 5–6.

4558. Calymnia orina. (Plate CXLI. fig. 32.)

Cosmia orina, Guen. Noct. ii. p. 10 (1852); Smith, Cat. Noct. N. Am. p. 212.
Calymnia calami, Harv. Cat. Ent. viii. p. 54 (1876).
Atethmia canescens, Behr. Bull. Cal. Ac. Sci. i. p. 61 (1885); Smith, Cat. Noct. N. Am. p. 214.

Head, thorax, and abdomen pale yellow suffused with bright rufous. Fore wing pale yellow suffused with bright rufous; subbasal line represented by an oblique rufous striga from costa defined by pale yellow on inner side; antemedial line rufous defined by pale yellow on inner side, very oblique and slightly sinuous; orbicular and reniform with pale yellow annuli, the former small, round, the latter narrow, oblique; an indistinct, rather diffused rufous medial line excurved from costa to lower angle of cell, then oblique; postmedial line rufous defined by pale yellow on outer side, oblique from costa to vein 6 and slightly incurved below vein 4; cilia rather deeper rufous. Hind wing yellowish white; the underside with the costa slightly tinged with rufous.

Ab. 1. Head, thorax, and fore wing suffused with brown instead of rufous.

Ab. 2. *calami*. Head, thorax, and fore wing pale yellow without rufous suffusion.

Ab. 3. Fore wing with the stigmata filled in with fuscous and with fuscous patch beyond lower angle of cell.

Hab. Canada, 1 ♂; U.S.A., Massachusetts, New York, 1 ♂, 1 ♀, Texas, 1 ♂, type *calami*, Colorado, 2 ♂, California (*Walsingham*), 1 ♂, Sta. Barbara (*D'Urban*), 2 ♂, S. Joaquim, 1 ♂, Arizona, Prescott, 2 ♂, Pinal Mts. (*Kunzé*), 1 ♀, Catalina Mts. (*Oslar*), 1 ♂, 3 ♀. *Exp.* 30–38 millim.

4559. Calymnia subtilis.

Cosmia subtilis, Staud. Stett. ent. Zeit. 1888, p. 33; Alph. Rom. Mém. v. p. 172, pl. 7. f. 8; Staud. Cat. Lep. pal. p. 204.

Head, thorax, and abdomen yellowish white tinged with rufous. Fore wing pale yellow slightly irrorated with rufous; a slight

rufous subbasal line angled outwards in cell and ending at submedian fold; antemedial line red-brown, extremely oblique and almost straight; orbicular and reniform defined by red-brown, the former large, round, the latter open above and somewhat produced at upper extremity; a rather diffused brown medial line, rufous at costa, oblique to lower angle of cell, then inwardly oblique and anastomosing with the antemedial line at inner margin; postmedial line slight, red-brown, sinuous, oblique from costa to vein 6, then inwardly oblique and curved inwards to the antemedial line above inner margin, black points beyond it above and below vein 4; an oblique brownish shade from costa towards apex to the angle of postmedial line at vein 6; traces of a pale yellow subterminal line, excurved below vein 7 and at middle, the area beyond it faintly tinged with brown. Hind wing pure white.

Hab. W. Turkestan, Turkomania, Merv, 1 ♂, 1 ♀, Ferghana. *Exp.* 36 millim.

4560. **Calymnia olivescens**, n. sp. (Plate CXLII. fig. 1.)

♂. Head and thorax whitish tinged with rufous and mixed with olive-green; pectus and legs whitish, the latter tinged with brown; abdomen rufous, the ventral surface whitish. Fore wing greyish tinged with pinkish rufous and irrorated with olive-green; antemedial line faint, diffused, olive-green, oblique from costa to subcostal nervure, then inwardly oblique; a medial olive-green shade, faint to median nervure, then prominent, slightly angled outwards below costa, then oblique and bent inwards on inner margin to the antemedial line; a faint obliquely incurved dark line from lower angle of cell to inner margin; postmedial line with oblique diffused white bar from costa to vein 7 with a dark shade before it, then indistinctly double, dark, incurved below vein 5; subterminal line slight, whitish, very minutely waved, below vein 4 double, filled in by a green shade, incurved and with a small black spot on it at inner margin; a terminal series of slight dark points; cilia darker at apex and vein 2. Hind wing white, a faint rufous terminal line from apex to vein 2; the underside with the costa slightly irrorated with brown.

Hab. Br. E. Africa, Taveta (*Rogers*), 1 ♂ type. *Exp.* 34 millim.

4561. **Calymnia bifasciata.**

Grammesia bifasciata, Staud. Stett. ent. Zeit. 1888, p. 254; id. Rom. Mém. vi. p. 482. pl. 8. f. 8; id. Cat. Lep. pal. p. 195.
Calymnia pryeri, Leech, P. Z. S. 1889, p. 516, pl. 51. f. 11.

Head and thorax red-brown mixed with grey; abdomen grey-brown, the anal tuft tinged with rufous, the ventral surface grey irrorated with brown. Fore wing grey thickly irrorated with olive-brown, the medial and postmedial areas almost entirely suffused with olive-brown except the former at costa; an indistinct grey subbasal line from costa to submedian fold; antemedial line

rather broad, grey, slightly oblique and somewhat excurved below costa and cell; orbicular and reniform with hardly traceable greyish outlines, the former round; postmedial line grey, indistinct and bent outwards below costa, then broad, oblique, straight, some white points beyond it on costa; a slight waved brown subterminal line, angled outwards at vein 7, excurved at middle and angled inwards below vein 2; a fine brown terminal line; cilia grey mixed with brown, crimson at tips. Hind wing red-brown, the interspaces of basal and costal areas greyish; a brown discoidal spot; termen grey with a fine brown terminal line; cilia brown at base, white at tips; the underside whitish irrorated with brown, a blackish discoidal spot, and oblique postmedial line with broad blackish shade beyond it from vein 4 to inner margin.

Hab. E. Siberia, Ussuri; Japan, Oiwaké (*Pryer*), 1 ♂, 2 ♀, type *pryeri*. *Exp.* 38–40 millim.

4562. Calymnia gemmella.

Orthosia gemmella, Saalm. Lep. Madag. p. 292, f. 258 (1891).

♀. Head and thorax bright chestnut-red, some of the scales tipped with white; antennæ with the shaft white at base; pectus yellowish behind; abdomen yellowish dorsally suffused with brown. Fore wing bright chestnut-red, the costal half suffused with grey to the postmedial line and irrorated with a few black scales, leaving the costal edge red; a slight blackish subbasal line from costa to submedian fold; a black point in cell before the antemedial line which is chestnut-red, very oblique from costa to submedian fold, then inwardly oblique, defined on inner side by some black scales towards costa; orbicular very small, greyish defined by black, oblique elliptical; reniform small, greyish slightly defined by fuscous, the lower part more strongly on outer side, strongly constricted at middle and figure-of-eight shaped; postmedial line grey slightly defined on each side by brown, extremely oblique from costa just before apex to inner margin beyond middle, straight; subterminal line absent; a terminal series of black points; cilia slightly tipped with white. Hind wing yellowish white suffused with brown; a slight dark spot at upper angle of cell; a terminal series of slight dark points; cilia pale yellow faintly tinged with rufous; the underside yellowish white, the costal and terminal areas irrorated with a few black scales and the costa tinged with rufous, a black discoidal spot and terminal series of points from apex to vein 2.

Hab. Madagascar, Betsileo (*Cowan*), 1 ♀. *Exp.* 32 millim.

Genus CIRRHOPHANUS.

Type.

Cirrhophanus, Grote, Can. Ent. iv. p. 187 (1872) .... *triangulifera*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd short; frons with large round corneous prominence with raised edges and its

lower edge produced to a point, a corneous plate below it; eyes large, round; antennæ of male laminate and minutely ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests, the patagia curled upwards at extremity; tibiæ slightly fringed with hair, the fore tibiæ with curved claw on inner side; abdomen without crests. Fore wing with the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with the postmedial line bent outwards from below costa to vein 6 near subterminal line.
  a. Hind wing not suffused with fuscous.
    a^1. Fore wing with the basal half of costal area suffused with cupreous ..... *duplicata*.
    b^1. Fore wing with the basal half of costal area not suffused with cupreous.
      a^2. Fore wing with the postmedial line not angled inwards at vein 2 ..... *triangulifera*.
      b^2. Fore wing with the postmedial line angled inwards at vein 2 ..... *dyari*.
  b. Hind wing suffused with fuscous brown to postmedial line.
    a^1. Hind wing with the terminal area yellow ..... *dubifera*.
    b^1. Hind wing with the inner and terminal areas tinged with rufous ..... *magnifera*.
  c. Hind wing wholly suffused with fuscous.
    a^1. Fore wing not suffused with purple ..... *nigrifera*.
    b^1. Fore wing suffused with purple to the postmedial line ..... *chrysochila*.
B. Fore wing with the postmedial line excurved from costa to vein 4, then incurved ..... *papago*.

*4563. ? Cirrhophanus duplicata.

Cirrhophanes duplicatus, Smith, Trans. Am. Ent. Soc. xviii. p. 112 (1891); id. Cat. Lep. N. Am. p. 261.

♀. Head and thorax pale ochreous yellow, the thoracic crests tipped with orange; abdomen ochreous. Fore wing pale ochreous yellow, the costal area and cell tinged with cupreous on basal half; the veins streaked with orange; subbasal line hardly traceable; antemedial line single, angled outwards below costa and in submedian fold and bent outwards to inner margin; claviform, orbicular and reniform absent; postmedial line minutely crenulate, very strongly excurved beyond the cell, then very obliquely curved to middle of inner margin; subterminal line strong and very distinct, evenly excurved; terminal area somewhat darker; cilia with a deep orange line at base. Hind wing ochreous, paler at base; a terminal orange line. Underside of fore wing reddish ochreous; hind wing pale with darker irroration.

Frontal prominence not produced to a point below; fore tibia (?) without claw.

Hab. U.S.A., Colorado, Platte Canon, 6500′ (*Bruce*). *Exp.* 30 millim. This species is unknown to me.

4564. Cirrhophanus triangulifera.

Cirrhophanus triangulifer, Grote, Can. Ent. iv. p. 187 (1872); id. Proc. Ac. Nat. Sci. Phil. 1875, p. 421 fig.; id. Ill. Essay, p. 60, pl. 3. f. 26; Smith, Cat. Noct. N. Am. p. 261.
Chariclea pretiosa, Morr. Proc. Bost. Soc. N. H. xviii. p. 122.

♂. Head, thorax, and abdomen deep orange mixed with pale yellow. Fore wing pale yellow, the veins streaked with orange except on terminal area; an orange streak in basal half of submedian fold; antemedial line orange, very oblique from costa to

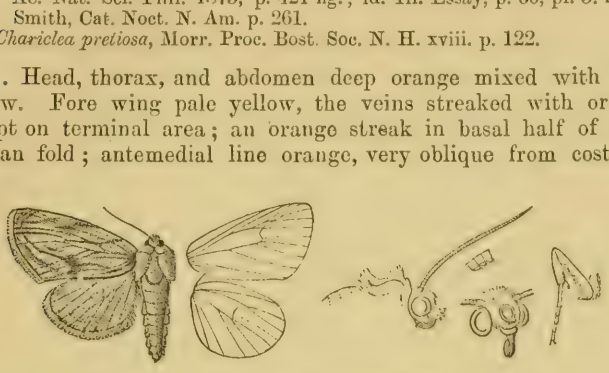


Fig. 72.—*Cirrhophanus triangulifera*, ♂. ½.

discal fold where it is angled outwards, slightly angled inwards on median nervure, then outwards to postmedial line in submedian interspace and ending on vein 1 near base; a forked streak in end of cell; streaks beyond the cell above and below vein 5; postmedial line double, very oblique from costa to below vein 7 near subterminal line, then oblique to submedian fold and erect to inner margin, with a band of orange suffusion on it below vein 2; subterminal line rather diffused, orange, curved, slightly incurved below vein 2; an orange terminal line. Hind wing pale orange-yellow.

Hab. U.S.A., Middle and Central States to Kansas, 1 ♂. *Exp.* 42 millim.

4565. Cirrhophanus dyari. (Plate CXLII. fig. 2.)

Cirrhophanus dyari, Cockerell, Can. Ent. xxxi. p. 288 (1899); Dyar, Cat. Lep. N. Am. p. 196.

♂. Head and thorax yellow; antennæ rufous; tegulæ with deep rufous line near tips; patagia, pro- and metathorax with rufous patches; abdomen yellow dorsally tinged with rufous. Fore wing yellow, the veins, discal and submedian folds streaked with orange-rufous to postmedial line; antemedial line orange-rufous, very oblique from costa to submedian fold where it is angled outwards to near postmedial line, then very oblique to inner margin near base; traces of an oblique diffused orange bar from costa to upper angle of cell; postmedial line orange-rufous, very oblique from costa to below vein 7 towards termen, obliquely excurved to vein 2 where it is angled inwards, then again obliquely excurved to inner margin, another line before it from discal fold to inner margin, diffused below vein 2; a rather diffused orange-rufous subterminal line, slightly angled outwards at vein 7, then

obliquely excurved and slightly incurved below vein 3; a fine orange-rufous terminal line. Hind wing pale yellow with traces of an obliquely curved postmedial line from costa to lower angle of cell.

Hab. U.S.A., New Mexico, Arizona, Huachuca Mts., 2 ♂. *Exp.* 38 millim.

*4566. Cirrhophanus dubifera. (Plate CXLII. fig. 3.)

Cirrhophanus dubifer, Dyar, J. N.Y. Ent. Soc. xv. p. 109 (1907).

♀. Head and thorax pale yellow suffused with bright rufous: palpi, frons, and a bar between antennæ bright rufous; tegulæ with strong rufous line near tips; patagia and thoracic crests rufous; abdomen yellow suffused with rufous. Fore wing pale golden-yellow, the veins, discal fold and submedian fold to antemedial line slightly streaked with rufous; antemedial line rufous, strongly angled outwards in cell, in submedian fold almost to postmedial line, angled inwards on median nervure and with rufous streak from it to postmedial line below vein 1; postmedial line rufous, very obliquely bent outwards from costa to just above vein 6, double below vein 6 and very obliquely curved to vein 2 where it is slightly angled outwards, not quite reaching inner margin; a faint obliquely curved slightly waved whitish subterminal line defined on inner side by pale rufous suffusion; a fine rufous terminal line; cilia with rufous line at middle. Hind wing yellowish white suffused with fuscous brown to the faint postmedial line which is strongly excurved beyond the cell, then incurved. Underside of fore wing suffused with fuscous brown except terminal area; hind wing uniform yellowish white.

Hab. Mexico *(Muller)*, type † ♀ in U.S. Nat. Mus. *Exp.* 46 millim.

*4567. Cirrhophanus magnifera. (Plate CXLII. fig. 4.)

Cirrhophanus magnifer, Dyar, J. N.Y. Ent. Soc. xv. p. 108 (1907).

♂. Head and thorax pale yellow suffused with bright rufous; frons rufous at sides; a rufous bar between antennæ; tegulæ with rufous medial line; patagia edged with rufous; thoracic crests deep rufous; abdomen pale ochreous, the ventral surface tinged with rufous. Fore wing very pale yellow, the veins, discal fold and submedian fold to antemedial line streaked with rufous; antemedial line rufous, strongly angled outwards in cell, in submedian fold almost to postmedial line, and slightly above inner margin, angled inwards on median nervure and vein 1 below which there is a slight streak from it to postmedial line; postmedial line rufous, very strongly bent outwards with a downward curve from costa to above vein 6, double below vein 6 and very obliquely curved to vein 2, where it is slightly excurved, then single and not quite reaching inner margin; a faint rather diffused obliquely curved rufous subterminal line; a fine rufous terminal line; cilia tinged

with rufous and with rufous line at middle. Hind wing yellowish white, the inner area tinged with rufous, the disk suffused with brown before the very faint postmedial line which is strongly excurved beyond the cell, then incurved; the terminal area slightly tinged with brown on apical half; a fine rufous terminal line; cilia tinged with rufous. Underside of fore wing tinged with brown except terminal area; hind wing yellowish white with the costa slightly tinged with rufous.

Hab. Mexico, Guadalajara (*Schaus*), type † ♂ in U.S. Nat. Mus. *Exp.* 52 millim.

4568. Cirrhophanus nigrifera. (Plate CXLII. fig. 5.)

Cirrhophanus nigrifer, Dyar, J. N.Y. Ent. Soc. xv. p. 108 (1907).
Cirrhophanus triangulifer, Druce, Biol. Centr.-Am., Het. ii. p. 489, pl. 94. f. 16 (nec Grote).

♀. Head and thorax yellow mixed with deep orange, the head almost wholly orange, the tegulæ with orange line near tips; abdomen yellow, dorsally slightly tinged with brown. Fore wing golden-yellow suffused and streaked with orange to postmedial line, the veins towards apex slightly streaked with orange; traces of a diffused orange antemedial line, angled outwards in submedian fold to near postmedial line, then very oblique to inner margin; a slight orange streak in end of cell and traces of an oblique diffused bar from costa to upper angle; postmedial line orange, rather diffused on inner side, very oblique from costa to below vein 7 towards termen, then very obliquely excurved to vein 2 where it is angled inwards, then again obliquely excurved to inner margin; cilia with slight orange line near tips. Hind wing yellowish suffused with fuscous brown, the termen narrowly and cilia orange-yellow. Underside of fore wing fuscous brown, the costa, apical area, and termen yellow; hind wing yellow tinged with brown.

Hab. Mexico, Durango (*Becker*), 1 ♀, Godman-Salvin Coll.; Guatemala (*Sadler*), 1 ♀. *Exp.* 40 millim.

4569. Cirrhophanus chrysochila. (Plate CXLVIII. fig. 6.)

Basilodes chrysochilus, Dyar, Pr. Ent. Soc. Wash. xi. p. 25 (1909).

♂. Head and thorax ochreous white, the crests and edges of patagia rufous; palpi and frons rufous; pectus and legs suffused with rufous; abdomen ochreous white dorsally suffused with rufous. Fore wing ochreous white suffused with rufous and purple, the veins streaked with rufous except on terminal area, the termen faintly tinged with rufous; antemedial line indistinct, rufous, angled outwards below costa and bent inwards to inner margin, a diffused pale streak beyond it in submedian interspace and another in lower extremity of cell; orbicular and reniform absent; an indistinct diffused oblique dark striga from costa above end of cell; postmedial line rufous, very obliquely downcurved from costa to vein 6 where it is angled outwards, then slightly sinuous and

strongly incurved below vein 4, another indistinct line before it from vein 5 to inner margin; subterminal line whitish slightly defined on each side by rufous, incurved above inner margin; a fine rufous terminal line. Hind wing ochreous white almost entirely suffused with rufous, the cilia ochreous white; the underside ochreous white faintly tinged with rufous and with slight subterminal shade.

Hab. Mexico, Tehuacan (*Muller*), 1 ♂. *Exp.* 34 millim.

*4570. ? Cirrhophanus papago. (Plate CXLII. fig. 6.)

Cirrhophanus papago, Barnes, Can. Ent. xxxix. p. 95 (1907).

Head and thorax orange-yellow; abdomen pale yellow tinged with brownish. Fore wing yellow, the veins and submedian fold orange-yellow; antemedial line orange-yellow, excurved and diffused; stigmata absent; postmedial line orange-yellow, diffused, excurved from costa to vein 4, then incurved; subterminal line absent. Hind wing yellow suffused with fuscous except towards inner margin; cilia yellow. Underside of fore wing with the disk suffused with fuscous; hind wing pale yellow.

Hab. U.S.A., S. New Mexico. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

Genus **BASILODES.**

	Type.
Basilodes, Guen. Noct. ii. p. 358 (1852)	*pepita.*
Deobriga, Wlk. Char. Undescr. Het. p. 41 (1869)	*pepita.*

Proboscis fully developed; palpi porrect, extending about the length of head, fringed with hair above and somewhat downcurved at extremity; frons with large round corneous prominence with raised edges and corneous plate below it; eyes large, round; antennæ of male laminate and minutely ciliated; thorax clothed with rough scales, the prothorax with spreading crest, the metathorax with very large crest and the patagia curled up at extremity; tibiæ moderately fringed with hair, the fore tibiæ with curved claw on inner side; abdomen without crests. Fore wing broad, the apex produced and acute, the termen excurved at middle and oblique towards tornus, hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with large irregular white patch defined by black on postmedial area ..... *philobia.*
B. Fore wing without white patch on postmedial area.
  a. Fore wing without olive-green patches on costa and at apex and tornus.
    *a*¹. Fore wing golden yellow ..... *pepita.*
    *b*¹. Fore wing pale yellow irrorated with olive-brown..... *chrysopis.*
  b. Fore wing with olive-green patches on costa at base and apex and at tornus ..... *mirabilis.*

4571. Basilodes philobia.

Zatrephes philobia, Druce, Biol. Centr.-Am., Het. ii. p. 370, pl. 74. f. 8 (1897).

♀. Head and thorax white; palpi, frons, antennæ, and metathorax tinged with rufous; pectus, legs, and abdomen tinged with rufous. Fore wing pale golden yellow with faint silky striæ and irrorated with a few black-brown scales; the costa tinged with rufous at base; subbasal line represented by an oblique rufous striga from costa; antemedial line rufous, indistinct and oblique from costa to submedian fold, then more prominent and inwardly oblique; orbicular large, round, silvery white defined by red-brown; reniform represented by a very large silvery white patch defined by red-brown, extending to below vein 2, its inner side rounded, its extremity extremely produced; postmedial line red-brown, very strongly excurved from costa to vein 2, then incurved; apical area whitish; three red-brown lunules just before termen between veins 5 and 2; a fine rufous terminal line; cilia tinged with rufous and chequered with dark brown. Hind wing pure silvery white, the termen and cilia faintly tinged with yellow; the underside with the costa faintly tinged with yellow.

Hab. Mexico, Jalapa (*Hoege*), 1 ♀, Guerrero (*H. H. Smith*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 34–42 millim.

4572. Basilodes pepita.

Basilodes pepita, Guen. Noct. ii. p. 358, pl. 12. f. 1 (1852); Smith, Cat. Noct. N. Am. p. 261.
Deobriga chrysopasa, Wlk. Char. Undescr. Het. p. 41 (1869).

Head and thorax pale yellow mixed with some rufous, the hinder part of thorax suffused with dark brown; palpi brown; frons with lateral brown bars; antennæ ringed with rufous; pectus and legs ochreous tinged with rufous; abdomen ochreous suffused with rufous. Fore wing metallic golden yellow; the base of inner margin pale yellow tinged with rufous; subbasal line rufous, curved

Fig. 73.—*Basilodes pepita*, ♂. ½.

from costa to base at median nervure; antemedial line indistinct, rufous, very oblique from costa to submedian fold, angled inwards on vein 1 and outwards to inner margin; orbicular and reniform large, defined by rufous, the former round, the latter with black point on inner side of centre; traces of a sinuous brown line from lower angle of cell to inner margin; postmedial line rufous, very

oblique from costa to below vein 7 where it is acutely angled, then very oblique and slightly incurved at submedian fold; subterminal line rather diffused, brown, oblique from costa just before apex to the angle of postmedial line, then minutely dentate and excurved at middle; a fine brown terminal line; cilia pale yellow tinged with brown at tips. Hind wing pale yellow suffused with red-brown except on costal area to beyond middle, traces of a discoidal bar and postmedial line excurved below costa, then oblique; cilia pale yellow slightly mixed with brown; the underside pale yellow, the costal and terminal areas slightly irrorated with brown, a slight postmedial line excurved and slightly waved below costa, then oblique; a fine terminal line.

Hab. U.S.A., 1 ♂ type *chrysopasa*, Virginia, Florida, Kansas (*Snow*), 2 ♀, Colorado. *Exp.* 44 millim.

4573. Basilodes chrysopis. (Plate CXLII. fig. 7.)

Basilodes chrysopis, Grote, Papilio, i. p. 154 (1881); Smith, Cat. Noct N. Am. p. 261.

Head and thorax pale yellow slightly mixed with rufous; palpi brownish; fore legs tinged with rufous; abdomen pale yellow. Fore wing pale yellow irrorated with olive-brown, the medial area except towards inner margin, the postmedial costal area and the terminal area suffused with olive-brown; subbasal line represented by a faint brown striga from costa; antemedial line indistinct, brown, very oblique from costa to submedian fold, angled inwards on vein 1 and outwards to inner margin; orbicular and reniform pale yellow, undefined, the former round, the latter with small black spot near inner edge; postmedial line brown, oblique from costa to below vein 7 where it is angled, then oblique, sinuous and incurved in submedian interspace; a very indistinct, minutely waved subterminal line. Hind wing yellowish white; traces of a fine postmedial line excurved below costa, then oblique; the terminal area faintly tinged with brown except towards tornus; cilia white faintly tinged with brown at base; the underside yellowish white with the costal area faintly tinged with brown.

Hab. U.S.A., Colorado, Denver (*Oslar*), 2 ♀, New Mexico, Albuquerque Mts. (*Oslar*), 3 ♂, 1 ♀, Arizona. *Exp.* 40–44 millim.

*4574. ? Basilodes mirabilis. (Plate CXLII. fig. 8.)

Basilodes mirabilis, Neum. Papilio, iv. p. 94 (1884); Smith Cat. Noct. N. Am. p. 262.

♂. Head and thorax greenish; antennæ yellowish; legs and abdomen pale ochreous. Fore wing pale greenish; a large triangular dark green patch on base of costal area, the white antemedial line arising from it, oblique to median nervure where it is sharply angled, then inwardly oblique; a dark discoidal striga; a rather elliptical dark green patch on costa towards apex, the white postmedial line defined on inner side by dark green arising

from below it, oblique and slightly incurved to inner margin; subterminal line white defined on inner side by dark green, slightly excurved to vein 4, then incurved, an irregular dark patch beyond it at tornus; cilia yellowish. Hind wing silvery white tinged with grey, the terminal area suffused with fuscous; cilia white; the underside uniform creamy white.

Hab. U.S.A., S.W. Arizona. *Exp.* 32 millim. This species is unknown to me, figured from a drawing from type in Coll. Brooklyn Soc. Arts & Sciences.

Genus **BASILICA**, nov.

Type, *B. chrysosticta.*

Proboscis aborted, minute; palpi obliquely porrect, extending about the length of head, the 2nd joint moderately fringed with scales (3rd joint broken); frons with large round corneous prominence with raised edges and wedge-shaped process in middle, a corneous plate below it; eyes large, round; antennæ of female laminate and ciliated; thorax clothed with scales and hair mixed, apparently without crests; tibiæ moderately fringed with hair; (fore legs broken); abdomen without crests. Fore wing very broad, the apex rounded, the termen evenly curved and slightly crenulate, the tornus with scale-tooth; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4575. Basilica chrysosticta.

Basilodes chrysosticta, Hmpsn. Moths Ind. iv. p. 535 (1896).

♀. Head and thorax pale brown-pink mixed with whitish; abdomen ochreous dorsally suffused with fuscous. Fore wing pale brown-pink tinged with whitish and irrorated with a few black scales; a large pale-yellow patch on medial area from cell to inner margin irrorated with some brick-red scales; subbasal line represented by indistinct double blackish striæ from costa; antemedial line double, waved, angled outwards on median nervure, blackish

Fig. 74.—*Basilica chrysosticta*, ♀. ½.

from costa to median nervure, then brick-red; orbicular absent; reniform represented by traces of a small lunule with some black scales on its edges; medial line black from costa to vein 2, oblique from costa to vein 6 well beyond the cell, excurved to vein 4, bent inwards to near origin of vein 2, then waved, brick-red; an oblique diffused patch of pale yellow irrorated with red from apex; post-

medial line arising from costa towards apex, double, dentate, brick-red on the yellow areas, fuscous on the brown, slightly excurved below costa, oblique to vein 3, bent inwards to near origin of vein 2 and again slightly excurved; a brown subterminal line arising from just beyond the postmedial line, obliquely curved to vein 3, then incurved and diffused; the yellow patch with brown streaks on the veins at apex; cilia dark at tips towards tornus. Hind wing greyish suffused with pale red-brown; the underside whitish tinged with red-brown.

Hab. Bombay (*Leith*), 1 ♀ type. *Exp.* 44 millim.

Genus **CIRRODES**, nov.

Type, *C. phœnicea.*

Proboscis fully developed; palpi upturned, slender, the 2nd joint reaching about to middle of frons, the 3rd moderate; frons with large corneous prominence with raised edges and corneous process with raised edges in centre, a corneous plate below it; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with hair and scales mixed and without crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate, the inner margin with slight scale-tooth at tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4576. Cirrodes phœnicea, n. sp.

Head and thorax creamy white mixed with some rufous; palpi, sides of frons, and antennæ rufous; legs suffused with rufous; abdomen pale yellowish dorsally tinged with rufous. Fore wing yellowish white suffused with bright crimson except on terminal area, deeper on the veins and leaving some yellowish white in cell; an oblique deep crimson shade from below middle of cell to inner margin near base; a faint oblique crimson bar from middle of costa

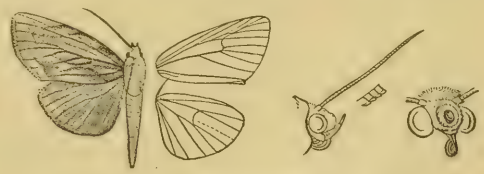


Fig. 75.—*Cirrodes phœnicea*, ♂. ½.

to upper angle of cell; postmedial line faint, oblique from costa to vein 6 and very strongly angled inwards at submedian fold, then outwards above vein 1; a faint oblique subterminal shade from below vein 4 to inner margin. Hind wing pale fulvous yellow, the female with a faint subterminal shade.

Hab. N.E. Rhodesia, E. Luangwa Distr. (*Neave*), 1 ♂, 1 ♀ type. *Exp.* 38 millim.

Genus **CARCHARODA**, nov.

Type, *C. flavirosea.*

Proboscis fully developed; palpi upturned, slender, the 2nd joint reaching to middle of frons, the 3rd moderate, porrect; frons with trilobate corneous plate, the middle lobe longest and a corneous plate below it; eyes large, round; antennæ of male laminate and ciliated; thorax clothed almost entirely with scales and without crests; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 and 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 very shortly stalked; 8 anastomosing with the cell near base only.

4577. Carcharoda flavirosea, n. sp.

♂. Head and tegulæ ochreous yellow mixed with some crimson; thorax crimson; pectus, legs, and abdomen ochreous yellow. Fore wing ochreous yellow; the basal costal area crimson; a slight crimson streak above base of vein 1; a slight brownish discoidal spot; the veins from end of cell to near termen streaked with crimson; an oblique crimson shade from costa above end of cell to

Fig. 76.—*Carcharoda flavirosea*, ♂. ½.

vein 6; postmedial line crimson, excurved to vein 4, then oblique; a slight brownish subterminal line with some crimson before it on costa, excurved below vein 7 and at middle, incurved below vein 3. Hind wing ochreous yellow.

Hab. Br. E. Africa, Mombasa (*Cholmley*), 1 ♂ type. *Exp.* 18 millim.

Genus **CHAMAECLEA.**

	Type.
Chamaeclea, Grote, Can. Ent. xv. p. 76 (1883)	*pernana.*

Proboscis fully developed; palpi obliquely upturned, slender and reaching to vertex of head; frons with truncate conical prominence with raised edges and vertical ridge across it; antennæ of male minutely ciliated and somewhat laminate; thorax and abdomen without crests; tibiæ smoothly scaled. Fore wing with the apex somewhat produced, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

4578. Chamaeclea pernana.

Chariclea pernana, Grote, Papilio, i. p. 155 (1881); id. Ill. Essay p. 60, pl. 3. f. 27; Smith, Cat. Noct. N. Am. p. 271.

Head and thorax ochreous tinged in parts with fulvous, the palpi, sides of frons, and basal joint of antennæ pinkish; abdomen fulvous. Fore wing pale purplish pink to the postmedial line with deeper patches at base of costal area, on inner medial area, and before the postmedial line towards costa; the antemedial line indistinct, strongly angled outwards in cell and submedian fold, then retracted; a slight olive discoidal bar; the postmedial line indistinct, very oblique from costa to vein 6, then slightly waved and incurved in submedian interspace; the terminal area ochreous with minutely

Fig. 77.—*Chamaeclea pernana*, ♂. ¾.

waved whitish subterminal line, angled inwards in submedian fold and with olive-yellow suffusion on its inner edge; a fine terminal line; cilia whitish with a fine line through them. Hind wing whitish, tinged with brown towards termen, the veins brownish. Underside of fore wing whitish suffused with fuscous.

Hab. U.S.A., Arizona, Prescott, 1 ♂, 1 ♀ type. *Exp.* 26–28 millim.

Genus **ECTOLOPHA**.

	Type.
Ectolopha, Hmpsn. Ann. S. Afr. Mus. ii. p. 382 (1902)	*viridescens*.

Proboscis aborted, rather small; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate, porrect; frons with roughened rounded prominence with slight corneous plate below it; eyes large, round; antennæ of male laminate and minutely serrate; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests, the patagia slightly turned up at extremities; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing broad, the apex rounded, the termen oblique towards tornus where there is a scale-tooth, and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from or from just below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with white patch defined by rufous on middle of inner margin, and purplish patches on middle of costa and on disk before postmedial line..... *viridescens*.
B. Fore wing without white or purplish patches, a red-brown terminal band ..... *marginata*.

4579. Ectolopha viridescens.

Ectolopha viridescens, Hmpsn. Ann. S. Afr. Mus. ii. p. 383 (1902).

Head and thorax yellowish white with some red-brown on head, dorsal edge of tegulæ, and vertex of thorax; patagia rufous and green on dorsal edge; abdomen yellowish white dorsally suffused with rufous except at extremity. Fore wing pale yellow-green; subbasal line purple-grey, obliquely curved, from costa to median nervure; a purplish grey patch on middle of costa crossed by the darker double antemedial, single medial, and double postmedial lines; an irregularly conical yellowish white patch on middle of inner margin, its inner and outer edges angled outwards on vein 1, irrorated with rufous, defined by rufous and traversed by the rufous postmedial line; the antemedial and medial lines obsolete except on the costal patch, the postmedial line oblique towards costa, angled outwards on vein 6, oblique to vein 4, dentate to vein 2, then incurved, with purple-grey patch before it beyond lower angle

Fig. 78.—*Ectolopha viridescens*, ♂. ½.

of cell; a subterminal series of slight rufous points; cilia green with fuscous lines at middle and tips. Hind wing greyish fuscous, the inner area yellowish white; cilia ochreous mixed with brown. Underside of fore wing fuscous with the base and inner area yellowish white; hind wing yellowish white, the terminal half suffused with fuscous except on inner area.

Ab. 1. Fore wing with the medial grey patch on costa almost obsolete, some dentate whitish marks on subterminal line towards costa.

Hab. Br. E. Africa, Taveta (*Rogers*), 2 ♀, Kikuyu (*Crawshay*), 1 ♀; Uganda, Mulema (*Doggett*), 1 ♀; Mashonaland, Salisbury (*Marshall*), 4 ♀ type; Transvaal (*Pead*), 2 ♀. *Exp.* 40 millim.

4580. Ectolopha marginata, n. sp. (Plate CXLII. fig. 9.)

Head red-brown; thorax yellowish white tinged with green, the base of tegulæ and pro- and metathoracic crests red-brown; pectus, legs, and abdomen ochreous suffused with red-brown. Fore wing yellowish white tinged with pale green especially in submedian fold; the costal edge brown; a minute brown point at upper angle of cell; a terminal purple-brown band narrowing to a point at apex and with slight double rufous somewhat sinuous line on its inner

edge; a fine brown terminal line: cilia brown with dark line through them. Hind wing pale ochreous suffused with brown; a fine brown terminal line; cilia brownish ochreous. Underside ochreous wholly suffused with red-brown.

Hab. Br. E. Africa, Kikuyu (*Crawshay*), 1 ♂, 1 ♀ type. *Exp.* 36 millim.

Genus **HOPLOLYTHRA**, nov.

Type, *H. discistriga.*

Proboscis fully developed; palpi obliquely upturned, the second joint reaching about to middle of frons and moderately fringed with scales, the 3rd short; frons with truncate conical prominence with raised edges and small central process, a corneous plate below it excised in front; eyes large, round; antennæ of male serrate and fasciculate; thorax clothed almost entirely with scales, the pro- and metathorax with spreading crests, the patagia somewhat curled up at extremities; fore tibiæ with slender spine at extremity on inner side; mid and hind tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell to towards middle

4581. **Hoplolythra discistriga.**

Lythrodes discistriga, Smith, Trans. Am. Ent. Soc. xxix. p. 207 (1903).

♂. Head and thorax yellow mixed with rufous; antennæ rufous; abdomen fulvous yellow, the ventral surface creamy white. Fore wing creamy white with fine rufous streaks on the veins and

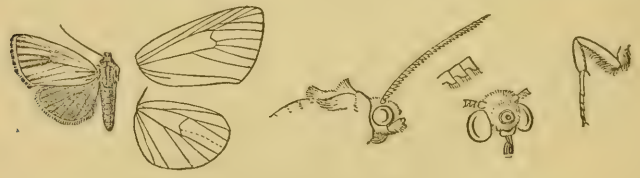


Fig. 79.—*Hoplolythra discistriga*, ♂. ½.

in submedian interspace, the streaks expanding between end of cell and termen; cilia chequered creamy white and rufous. Hind wing golden yellow.

Hab. U.S.A., California, Walters Sta., Arizona, Redington, 1 ♂. *Exp.* 28 millim.

Genus **LYTHRODES.**

Type.

Lythrodes, Smith, Trans. Am. Ent. Soc. xxix. p. 206 (1903) ..... *radiata.*

Proboscis fully developed; palpi obliquely porrect, short and slender, the 2nd joint slightly fringed with hair in front, the 3rd moderate; frons with corneous prominence with raised edge and flattened vertical plate at middle, a curved corneous plate below it; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with hair only and without crests; tibiæ

slightly fringed with hair, the fore tarsi very short with the ungues large; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing without dark medial and postmedial shades.
  a. Fore wing with the pink streaks leaving broad yellowish fasciæ on the veins ..... *radiata.*
  b. Fore wing with the pink fasciæ leaving narrow yellowish streaks on the veins ..... *venata.*
B. Fore wing with dark medial and postmedial shades ..... *semiluna.*

4582. Lythrodes radiata.

Lythrodes radiatus, Smith, Trans. Am. Ent. Soc. xxix. p. 206 (1903).

Head and thorax creamy white; antennæ rufous; pectus, legs, and abdomen white suffused with ochreous brown. Fore wing creamy white: the basal area with bright pink streaks below costa, in cell, above vein 1 and inner margin, and a streak below median

Fig. 80.—*Lythrodes radiata*, ♂. ½.

nervure and vein 2 to termen; two short streaks in end of cell and streaks in the interspaces of terminal area; cilia chequered creamy white and rufous. Hind wing creamy white.

Hab. U.S.A., New Mexico, Deming, 1 ♂, 1 ♀, Arizona, Yuma Co. *Exp.* ♂ 24, ♀ 28 millim.

*4583. Lythrodes venata.

Lythrodes venatus, Smith, Trans. Am. Ent. Soc. xxix. p. 207 (1903).

♀. Head and thorax very pale yellow; abdomen almost white. Fore wing carmine pink; the costa and inner margin pale yellowish; the veins with pale yellow streaks expanding somewhat towards termen; a whitish ill-defined mark in cell representing the orbicular; cilia white intersected with black. Hind wing white with a faint yellowish tinge.

Hab. U.S.A., New Mexico, Sta. Fé. *Exp.* 28 millim. This species is unknown to me.

*4584. ? Lythrodes semiluna.

Lythrodes semiluna, Smith, Can. Ent. xxxvii. p. 67 (1905).

♂. Head, thorax, and abdomen white with a faint olive tinge, the thorax with olive scales mixed. Fore wing white with a faint olive tinge; an olive-brown medial shade, incurved, its inner edge well defined, its outer edge diffused to beyond the cell, where another shade arising from costa before apex curves inwards, then outwards to termen at vein 3, this dark area growing paler outwardly, leaving the apex and veins white; orbicular represented by some blackish scales on the medial shade, the reniform by a slight dark lunule at end of cell. Hind wing white with the termen narrowly fuscous; the underside white with small discoidal dark spot and postmedial and terminal dark bands.

Hab. U.S.A., Arizona, Cochise Co. *Exp.* 20 millim. This species is unknown to me.

Genus **ARGYRHODA**, nov.

Type, *A. laronia*.

Proboscis aborted, small; palpi obliquely porrect, hardly reaching beyond the frontal prominence and moderately fringed with hair below; frons with large round corneous prominence with raised edges and vertical ridge in middle and curved corneous plate below it; eyes large, round; antennæ of female ciliated; thorax clothed with hair and scales mixed and without crests; tibiæ smoothly scaled, the fore tibia rather dilated, the tarsal joints short and the ungues very large; abdomen without crests. Fore wing with the apex produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

4585. Argyrhoda laronia.

Thalpochares laronia, Druce, P. Z. S. 1890, p. 516; id. Biol. Centr.-Am., Het. ii. p. 496, pl. 95. f. 19.

♀. Head, thorax, and abdomen brownish ochreous. Fore wing brownish ochreous; a silvery white streak below costa to the very oblique silvery white antemedial band which is diffused to base on

Fig. 81.—*Argyrhoda laronia*, ♀. ½.

inner area; a broad oblique silvery white medial band from cell to inner margin; the cell on medial area crimson, extending between the antemedial and medial bands to submedian fold; an oblique discoidal silvery white bar; postmedial band silvery white, oblique

and narrow from costa to vein 7 towards termen, then broader and very oblique, defined on inner side by crimson between vein 7 and submedian fold; a silvery white subterminal band; cilia white. Hind wing white irrorated with pale brown; a rather diffused pale brown postmedial line excurved below costa, then oblique and sinuous; a diffused subterminal band; a fine terminal line; the underside with the costal area and veins tinged with ochreous brown, an indistinct curved postmedial line.

Hab. Mexico, Guerrero, Tierra Colorada (*H. H. Smith*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 28 millim.

Genus **SATRAPODES**, nov.

Type, *S. mina*.

Proboscis fully developed; palpi upturned, slender, the 2nd joint reaching about to vertex of head and moderately fringed with scales in front, the 3rd moderate; frons with large round corneous process with raised edges and corneous plate below it; eyes large, round; antennæ of male laminate and ciliated, with ridge of scales between them; thorax clothed chiefly with scales and without crests; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the costa strongly arched, the apex produced and acute, the termen excurved at middle, oblique towards tornus and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

4586. **Satrapodes mina.**

Basilodes mina, Schaus. Trans. Am. Ent. Soc. xxi. p. 239 (1894); Druce, Biol. Centr.-Am. Het. ii. p. 503, pl. 96. f. 9.

Head and thorax golden yellow mixed with some white and red-brown; palpi white in front; tegulæ white with slight dorsal brownish streak; abdomen fulvous yellow, ventrally ochreous. Fore wing metallic golden yellow tinged in parts with olive-brown, the costal and terminal areas slightly irrorated with brown, the veins finely streaked with brown; subbasal line represented by an

Fig. 82.—*Satrapodes mina*, ♂. ½.

oblique brown striga from costa; antemedial line fine, brown, oblique from costa to median nervure, then very oblique to inner margin near base; orbicular represented by a small round silvery white spot defined by brown in upper part of cell, the reniform by a silvery white point at upper angle of cell and small triangular spot at lower angle, both defined by brown; medial line brown,

very oblique from costa to upper angle of cell, obliquely incurved from lower angle to inner margin; postmedial line fine, brown, very oblique from costa to vein 7, then very oblique to inner margin; an oblique brown streak from just below apex to just below angle of postmedial line; subterminal line faint, whitish defined on inner side by brown and obsolescent between veins 6 and 4, minutely dentate, incurved below vein 3; a fine slightly waved brown terminal line. Hind wing whitish suffused with brown and with a golden gloss; cilia white tinged with ochreous; the underside glossy white slightly tinged with brown.

Hab. Mexico, Jalapa (*Trujillo*), 1 ♂, 1 ♀, Godman-Salvin Coll. *Exp.* ♂ 32, ♀ 36 millim.

Genus **CHALCOPASTA**, nov.

Type, *C. territans*.

Proboscis fully developed; palpi porrect, extending about the length of head and thickly clothed with hair; frons with large round corneous process with raised edges and central process and corneous plate below it; eyes large, round; antennæ of male typically serrate; thorax clothed with rough scales, the pro- and metathorax with spreading crests, the patagia curled upwards at extremities; tibiæ slightly fringed with hair, the fore tibiæ with large curved claw on inner side; abdomen without crests. Fore wing with the apex somewhat produced, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male serrate.

A. Fore wing without rufous patch at tornus.
  a. Fore wing with antemedial rufous patch on costa.
    a^1. Fore wing with the discoidal patch including the reniform which is defined by rufous and constricted at middle ..... *arianda*.
    b^1. Fore wing with the discoidal patch including the reniform which is golden green with a rufous line in middle ..... *territans*.
  b. Fore wing without antemedial rufous patch on costa..... *houardi*.
B. Fore wing with rufous patch at tornus ..... *arizona*.

4587. Chalcopasta arianda.

Plusia arianda, Druce, Biol. Centr.-Am., Het. i. p. 329, pl. 30. f. 11 (1889).

♀. Head and thorax white tinged with rufous; palpi, antennæ, terminal half of patagia, and metathorax rufous; pectus, legs, and abdomen whitish suffused with rufous. Fore wing brilliant metallic golden green; the costal area whitish suffused with rufous, narrowing to apex, expanding into a quadrate patch in cell before middle and a discoidal patch, angled inwards on median nervure and including the reniform, which is defined by rufous, constricted at middle and with some golden scales on its inner edge; the base

of inner margin rufous and white; a fine rufous terminal line; cilia chequered white tinged with rufous and fuscous and with a dark line near base. Hind wing white, the costal and terminal areas suffused with rufous; cilia white. Underside of fore wing fuscous, the costal and terminal areas yellowish white.

Hab. Mexico, N. Sonora (*Morrison*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 38 millim.

4588. Chalcopasta territans.

Basilodes territans, H. Edw. Papilio, iv. p. 45 (1884); Ottolengui, Can. Ent. xxx. p. 105, pl. 5. ff. 3, 4; Smith, Cat. Noct. N. Am. p. 261.

♂. Head and thorax yellowish white; palpi, antennæ, and tips of patagia rufous; pectus, legs, and abdomen white tinged with rufous. Fore wing brilliant metallic golden green; the costal area white irrorated with rufous, narrowing to apex, expanding into a quadrate patch in cell before middle and into a discoidal patch angled inwards on median nervure with the golden-green reniform

Fig. 83.—*Chalcopasta territans*, ♂. ½.

on it with rufous line in middle; median nervure streaked with white; a white and rufous patch on base of inner margin; a rufous terminal line; cilia chequered white and rufous. Hind wing white with fine rufous terminal line. Underside of fore wing grey, the costal area white tinged with rufous, the terminal area whitish.

Hab. U.S.A., Arizona, Huachuca Mts., 1 ♂. *Exp.* 36 millim.

4589. Chalcopasta houardi. (Plate CXLII. fig. 10.)

Plusia howardi, H. Edw. Pacific Coast Lep. xxv. p. 1 (1877); Ottolengui, Can. Ent. xxx. p. 106, pl. 5. f. 2; Smith, Cat. Noct. N. Am. p. 261.

♀. Head and thorax rufous slightly mixed with whitish; abdomen whitish tinged with rufous. Fore wing brilliant greenish gold; the costa whitish tinged with rufous, expanding beyond middle into a large conical patch extending to just below lower angle of cell and including the reniform, which is defined by rufous, strongly constricted at middle and figure-of-8-shaped and with a few golden scales on it, the patch defined by a rufous line but extending beyond it towards apex; the basal area whitish tinged with rufous, with wedge-shaped golden patch on it below costa near base bounded by the fine rufous oblique sinuous antemedial line, the outer edge of basal area very oblique and angled outwards

below cell and at vein 1; a fine rufous terminal line and sometimes a patch on middle of termen; cilia whitish tinged with rufous and intersected with dark brown. Hind wing whitish suffused with rufous especially on terminal area; cilia white. Underside of fore wing fuscous, the costal and terminal areas ochreous white; hind wing white.

Hab. U.S.A., Arizona, Prescott (*Kunzé*), 1 ♀. *Exp.* 40 millim.

*4590. Chalcopasta arizona.

Plusia arizona, French, Can. Ent. xxi. p. 161 (1889); Ottolengui, Can. Ent. xxx. p. 106; Smith, Cat. Noct. N. Am. p. 248.

♂. Head and thorax purple-brown mixed with ochreous, the crests darker at tips; abdomen whitish tinged with brown. Fore wing brilliant metallic gold; the costa narrowly purple-brown; a small triangular purple-brown patch from costa at base to inner margin before middle; a quadrate antemedial patch from costa to median nervure; a subquadrate patch from costa in and beyond end of cell, extending to near apex; patches on termen at middle and tornus; cilia chequered whitish and purple-brown. Hind wing whitish with a fine dark terminal line.

Hab. U.S.A., Arizona. *Exp.* 38 millim. This species is unknown to me.

Sect. II. Antennæ of male minutely ciliated.

A. Fore wing purple-grey with patches of golden green.
  a. Hind wing white with subterminal dark shade ..... *pterochalcea.*
  b. Hind wing brown.
    a^1. Fore wing with subterminal golden green band confluent with the oblique band from middle of cell to tornus ..... *acantha.*
    b^1. Fore wing with the oblique golden green band only.
      a^2. Fore wing with the oblique band narrow and elliptical below the cell ..... *chalcotoxa.*
      b^2. Fore wing with the oblique band broad and quadrate below the cell ..... *acema.*
B. Fore wing silvery white with ante- and postmedial rufous bands ..... *cœlelei.*

4591. Chalcopasta pterochalcea. (Plate CXLVIII. fig. 7.)

Basilodes pterochalcea, Dyar, Pr. Ent. Soc. Wash. xi. p. 24 (1909).

♂. Head and tegulæ grey mixed with reddish brown, the latter with pale tips; thorax dark brown mixed with grey; abdomen whitish suffused with rufous. Fore wing metallic brassy; the costal edge grey mixed with red-brown expanding into an irregular brown-edged patch on discocellulars, then narrowing to a point before apex; the base of inner margin grey and brown expanding into a sharp triangular patch before middle extending nearly to cell; a subterminal series of slight brown spots excurved below vein 7 and at middle; cilia grey and red-brown. Hind wing white

irrorated with brown; an indistinct subterminal shade and fine terminal line; the underside white, the apex slightly irrorated with brown, a faint postmedial line on costal area.

Hab. Mexico, Tehnacan (*Muller*), 1 ♂. *Exp.* 36 millim.

4592. Chalcopasta acantha.

Plusia acantha, Druce, Biol. Centr.-Am., Het. i. p. 329, pl. 30. f. 13 (1889).

Head, thorax, and abdomen dark brown tinged with greyish; palpi, pectus, legs, and ventral surface of abdomen more rufous; tarsi brown ringed with rufous. Fore wing brown suffused with purplish grey; the basal half of inner area dark olive-brown with a greenish gold spot below base of cell bounded by the brown antemedial line, which is oblique from costa to submedian fold, then inwardly oblique; orbicular greenish gold slightly defined by brown, oblique elliptical, very large, and connected with the greenish gold on postmedial area; reniform slightly defined by brown and strongly constricted at middle; postmedial line slight, brown, oblique from costa to vein 6, inwardly oblique to vein 4,

Fig. 84.—*Chalcopasta acantha*, ♂. ½.

then retracted to origin of vein 2 and outwardly oblique to inner margin; an oblique series of greenish gold spots from apex to vein 3, then expanding into a large patch extending to origin of vein 2 and termen; cilia dark brown mixed with whitish. Hind wing very dark red-brown; cilia dark brown mixed with whitish. Underside of both wings grey-brown with the costal areas ochreous white.

Hab. Mexico, Guerrero (*H. H. Smith*), 1 ♂ type; Guatemala, S. Geronimo (*Champion*), 1 ♀, Godman-Salvin Coll. *Exp.* 36 millim.

4593. Chalcopasta chalcotoxa. (Plate CXLVIII. fig. 8.)

Basilodes chalcotoxum, Dyar, Proc. Ent. Soc. Wash. xi. p. 25 (1909).

♂. Head, thorax, and abdomen dark reddish brown mixed with grey; lower part of frons and ventral surface of abdomen whitish. Fore wing dark red-brown irrorated with grey; a metallic brassy patch at base from just above to just below cell with another patch beyond it in and above cell, its extremity connected with an oblique patch extending from the cell to tornus; antemedial line dark brown, oblique, sinuous; an oblique sinuous medial line from cell

to inner margin; traces of a postmedial line oblique from costa to vein 6, then oblique and minutely waved: cilia with a fine pale line at base. Hind wing red-brown with a cupreous gloss; the cilia with a fine pale line at base; the underside grey-white irrorated and suffused with red-brown.

Hab. Mexico, Tehnacan (*Muller*), 1 ♂. *Exp.* 32 millim.

4594. Chalcopasta acema.

Plusia acema, Druce, Biol. Centr.-Am., Het. i. p. 330, pl. 30. f. 14 (1889).

♂. Head, thorax, and abdomen purplish grey mixed with brown; palpi, pectus, legs, and ventral surface of abdomen whitish tinged with ochreous. Fore wing red-brown suffused and irrorated with purplish grey; a brilliant golden patch in cell from base to near extremity, extending to just below it at base and to just above it at extremity and confluent with a very broad oblique golden band extending from cell to inner margin near tornus; reniform small, indistinct, brownish faintly defined by grey, strongly constricted at middle and with small golden spots in upper and lower parts; a faint postmedial line, oblique from costa to vein 7, then inwardly oblique to the golden band at vein 3; the terminal area rather redder irrorated with a few golden scales; cilia whitish with a dark brown line through them. Hind wing brown irrorated with grey; cilia whitish with a brown line through them. Underside of both wings grey suffused with brown, the costal area of fore wing ochreous.

Hab. Mexico, Guerrero (*H. H. Smith*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 28 millim.

*4595. Chalcopasta cœbelei. (Plate CXLII. fig. 11.)

Antaplaga kœbelei, Riley, Ins. Life, v. p. 333 (1893); Dyar, Cat. Lep. N. Am. p. 183.

♂. Head and thorax white mixed with bright rufous; palpi white, rufous at tips; rufous bars above frons and between antennæ; tegulæ with rufous bands at sides; patagia edged with rufous; pro- and metathoracic crests rufous; abdomen white slightly tinged with rufous. Fore wing silvery white, the base and costal and inner margins rufous to the nearly straight erect narrow rufous antemedial band which is unusually near base; a minute black discoidal lunule; postmedial line strong, double, rufous filled in with pale yellow, dilated at costa, oblique to vein 6, strongly incurved below vein 5 and very slightly excurved below submedian fold, a rufous fascia in discal fold from it to the rufous subterminal line, which is very near termen, incurved and slightly waved from costa to vein 4, the area beyond it pale yellow; a rufous terminal line; cilia white with the tips rufous at apex and towards tornus. Hind wing white tinged with brown except inner

area. Underside of fore wing suffused with brown except the costa; hind wing pure white.

Hab. U.S.A., Kansas, Argus Mts. (*Riley*), in U.S. Nat. Mus., California. *Exp.* 32 millim.

Genus **CENTROGONE**, nov.

Type, *C. chlorochrysa.*

Proboscis aborted, small; palpi obliquely porrect, extending to just beyond frons, the 2nd joint moderately scaled, the 3rd short; frons with corneous prominence with raised edges and central process, a large corneous plate below frons; eyes large, round; antennæ of male bipectinate with moderate branches to apex; thorax clothed almost entirely with scales, the pro- and metathorax with small spreading crests; fore tibiæ short with curved claw on inner side at extremity, the mid and hind tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of disco-cellulars; 6, 7 shortly stalked; 8 anastomosing with the cell to near middle.

4596. **Centrogone chlorochrysa**, n. sp.

♂. Head, tegulæ, and legs ochreous white mixed with rufous; thorax ochreous white; abdomen ochreous white slightly tinged with rufous at middle of dorsum and on ventral surface. Fore wing pale golden green, the extreme base and costal edges ochreous white thickly irrorated with rufous; antemedial line represented by slight dark points on the veins; orbicular very small, round, with ochreous white centre defined by fuscous; reniform with

Fig. 85.—*Centragone chlorochrysa*, ♂. ½.

rufous centre surrounded by small rufous fuscous-edged spots; postmedial line represented by an oblique series of dark points on the veins from vein 7 to inner margin, the subterminal line by points on veins 7, 6, 4; a fine waved brown terminal line with black points in the interspaces; cilia red-brown at base, chequered red-brown and white at tips and with fine dark line through them. Hind wing pure white, the cilia brownish from apex to vein 2; the underside with the costal area irrorated with rufous.

Hab. Transvaal, Johannesburg (*Cholmley*), 1 ♂ type, Gemsbok-fontein (*Janse*), 4 ♂; Orange River Colony, Bloemfontein (*Eckersley*), 1 ♂. *Exp.* 34 millim.

Genus **NEUMŒGENIA**.

	Type.
Neumœgenia, Grote, Pap. ii. p. 132 (1882)	*poetica.*
Kallitrichia, Ottolengui, Can. Ent. xxx. p. 107 (1898), nec *Callitriche*, Poli, Moll. 1792	*coronides.*
Trichocala, Dyar, Cat. Lep. N. Am. p. 196 (1902)	*coronides.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint hardly reaching middle of frons and moderately scaled, the 3rd short; frons with rounded prominence with corneous plate below and ridge above; eyes large, round; antennæ of male somewhat laminate and almost simple; thorax clothed almost entirely with scales and without crests; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with white streak on terminal half of median nervure.
  a. Fore wing with the streak on median nervure bifurcating on veins 4, 3 ..... *poetica.*
  b. Fore wing with the streak on median nervure and vein 4 not bifurcate ..... *albavena.*
B. Fore wing with purple-brown spot at lower angle of cell edged with white ..... *coronides.*

4597. Neumœgenia poetica.

Neumœgenia poetica, Grote, Papilio, ii. pp. 132, 184 (1882); Smith, Cat. Noct. N. Am. p. 265.
Plusia smithi, Druce, Biol. Centr.-Am., Het. i. p. 329, pl. 30. f. 12 (1889); Dyar, Cat. Lep. N. Am. p. 196.
Kallitrichia sagittalba, Ottolengui, Can. Ent. xxx. p. 108, pl. 5. f. 7 (1898).

Head, tegulæ, and front of thorax yellowish white, the rest of thorax brown; palpi, frons, and antennæ brownish; pectus and legs ochreous white, the fore legs tinged with brown; abdomen ochreous

Fig. 86.—*Neumœgenia poetica*, ♂. ½.

white. Fore wing brilliant metallic golden green, the costal area ochreous white expanding somewhat towards apex, the termen with narrow ochreous white band; the base reddish brown with oblique outer edge; the extremity of median nervure and bases of veins 5, 4, 3 streaked with ochreous white; the termen and cilia pale olive with

a fine white line at base of latter. Hing wing ochreous white tinged with brown; cilia ochreous white. Underside of fore wing tinged with fuscous, the costa and termen pale rufous; hind wing ochreous white.

Hab. U.S.A., Oregon, Arizona, Huachuca Mts. (*Oslar*), 2 ♂, 2 ♀, Oracle (*Oslar*), 2 ♀; Mexico, Durango (*Becker*), 2 ♂, Guerrero (*H. H. Smith*), 2 ♂, 2 ♀ type *smithi*, Tabasco (*H. H. Smith*), 1 ♂, Godman-Salvin Coll. *Exp.* 28–34 millim.

*4598. Neumœgenia albavena.

Kallitrichia albavena, Ottolengui, Can. Ent. xxx. p. 107, pl. 5. f. 5 (1898); Dyar, Cat. Lep. N. Am. p. 196.

♀. Head, thorax, and abdomen white; antennæ brown except at base. Fore wing metallic golden green; narrow white fasciæ on costa and inner margin; a white streak on terminal half of median nervure and basal half of vein 4; cilia white. Hind wing pure satiny white.

Hab. U.S.A., Arizona. *Exp.* 30 millim. This species is unknown to me.

4599. Neumœgenia coronides.

Plusia coronides, Druce, Biol. Centr.-Am., Het. i. p. 328, pl. 30. f. 10 (1889); Dyar, Cat. Lep. N. Am. p. 196.
Kallitrichia pendula, Ottolengui, Can. Ent. xxx. p. 108, pl. 5. f. 6 (1898).

♀. Head, tegulæ, and base of patagia white; palpi, frons, antennæ, shoulders, thorax, legs, and abdomen pale rufous. Fore wing brilliant metallic golden green; the costal area white thickly irrorated with rufous, its lower edge expanding into a slight projection just beyond end of cell, and just before termen narrowing abruptly to apex; a rufous fascia irrorated with white on inner margin to before middle, the margin then with some rufous and white scales; a rufous spot at lower angle of cell slightly edged with white; cilia rufous and white. Hind wing white suffused with pale rufous; cilia white at tips. Underside of fore wing pale grey-brown with a metallic gloss, the costal area pale rufous; hind wing white tinged with rufous.

Ab. 1. *pendula*. Fore wing with the spot at lower angle of cell connected with the costal fascia.

Hab. U.S.A., Arizona; Mexico, Guerrero (*H. H. Smith*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 36 millim.

Genus **MUDARIA**.

Type.
Mudaria, Moore, Indian Museum Notes, iii. p. 68 (1893) ..... *cornifrons*.

Proboscis fully developed; palpi porrect, the 2nd joint moderately fringed with scales below, the 3rd rather long; frons with large trilobate corneous process from middle, a corneous plate below frons excised in front; eyes large, round; antennæ of male laminate; thorax clothed almost entirely with scales

and without crests; tibiæ fringed with long hair; abdomen smoothly scaled and without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a long areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4600. Mudaria cornifrons.

Mudaria cornifrons, Moore, Indian Museum Notes, iii. p. 69 (1893); Hmpsn. Moths Ind. ii. p. 245.

Head and thorax white tinged with pale brown and more or less irrorated with black; tarsi banded with black; abdomen ochreous white dorsally suffused with brown. Fore wing ochreous white thickly irrorated with pale brown and with a few black scales; subbasal line represented by a slight black striga from costa; antemedial line black, double towards costa, oblique from costa to submedian fold, then strongly angled inwards on vein 1 and outwards to inner margin: orbicular and reniform forming a confluent patch of the ground-colour defined on inner and outer

Fig. 87.—*Mudaria cornifrons*, ♂. ½.

sides and below by black, extending to below cell; postmedial line black, double on costal half, minutely dentate, angled outwards at vein 5 and oblique below vein 3; subterminal line indistinct, dentate, and with slight dentate dark marks before it at middle, angled outwards at vein 7 and oblique below vein 3: a terminal series of black points; cilia whitish at base, brownish at tips. Hind wing pure semihyaline white, the termen with fine brownish line and some black points towards apex.

Ab. 1. Fore wing with the orbicular and reniform patch strongly defined by diffused black.

Hab. Bengal, Calcutta (*Cotes*), 3 ♂, 1 ♀ type. *Exp.* 40–44 millim.

Larva. Feeds in the pods of the Silk-Cotton (*Bombax malabaricum*) and pupates in the soil in cocoons made of earth and silk.

Genus OCHROCALAMA, nov.

Type, *O. xanthia*.

Proboscis aborted, minute; palpi obliquely upturned, reaching about to middle of frons and moderately fringed with hair in front; frons with long corneous process bifid at extremity and corneous plate below it excised in front; eyes

large, round; antennæ of male bipectinate with rather long branches to apex, of female minutely serrate; thorax clothed with rough hair and hair-like scales and without crests; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4601. Ochrocalama xanthia.

Megalodes xanthia, Hmpsn. Ann. S. Afr. Mus. iii. p. 434 (1905).

♂. Head and thorax yellow mixed with rufous, the tips of tegulæ and upper edge of patagia with some black scales; tibiæ and tarsi brownish, the latter ringed with whitish; abdomen ochreous yellow. Fore wing yellow sparsely irrorated with rufous, the terminal area paler; a subbasal dark point in cell; an ill-defined rufous antemedial line, angled outwards below costa, in submedian fold and above inner margin; orbicular and reniform rounded, yellow with some rufous scales in centre, defined by red-brown before and between them in cell and by an irregular fascia on median nervure expanding at base of vein 2 and beyond lower angle of cell; a red-brown medial line oblique from costa to reniform, oblique and

Fig. 88.—*Ochrocalama xanthia*. ♂. ½.

sinuous from cell to inner margin; an ill-defined rufous postmedial line, oblique from costa to vein 6, then waved, strongly incurved below vein 4, some short red-brown streaks beyond it on costa; an ill-defined waved red-brown subterminal line, angled outwards at vein 7 and excurved at middle; a terminal series of red-brown striæ; cilia yellow mixed with red-brown. Hind wing pale yellow, the terminal area slightly irrorated with red-brown; a brown discoidal lunule, traces of a waved postmedial line from costa to vein 2 and of a subterminal series of small spots; a fine red-brown terminal line; cilia yellow mixed with red-brown; the underside with the costa slightly irrorated with rufous, a brown discoidal lunule and indistinct curved postmedial line.

♀. Hind wing wholly suffused with red-brown.

Hab. Mashonaland (*Dobbie*), 1 ♀; Transvaal (*Pead*), 2 ♂, 1 ♀, Piet Retief (*Crawshay*), 1 ♂; Natal, Delvin (*Stanger*), 1 ♂ type, Bushman's R. (*Hutchinson*), 1 ♀; Pondoland, Nggeleni (*Swinny*), 1 ♂. *Exp.* 28–38 millim.

Genus **SYNCALAMA**, nov.

Type, *S. mimica*.

Proboscis aborted, minute; palpi porrect, hardly extending as far as frons and fringed with long hair below; frons with large round corneous prominence with raised edges and short central process hollowed out in front; a trilobate corneous plate below it; eyes large, round; antennæ of male serrate; thorax clothed with rough hair and hair-like scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4602. **Syncalama mimica**, n. sp.

♂. Head and thorax ochreous mixed with brown; antennæ red-brown; upper edge of patagia and metathorax with some blackish scales; abdomen pale ochreous dorsally suffused with brown. Fore wing ochreous yellow suffused in parts with brown, especially on inner basal area, in and beyond cell, and on postmedial area; subbasal line represented by slight black striæ from costa and cell; traces of a black streak below base of cell; antemedial line rather ill-defined, black, oblique, waved; claviform large, rather incompletely defined by black; orbicular and reniform large, yellow

Fig. 89.—*Syncalama mimica*, ♂. ½.

defined by black, the former round, the latter open above and rather constricted at middle; an indistinct waved black line from lower angle of cell to inner margin; postmedial line brown, rather ill-defined, excurved from costa to vein 5, then oblique; subterminal line hardly defined except by the constrast between the rufous and yellow areas, waved, excurved below vein 7 and at middle, then incurved; a terminal series of small black lunules; cilia yellow mixed with rufous. Hind wing yellowish white with terminal series of small black spots; the underside with the costal area slightly irrorated with rufous, a small discoidal spot and rather diffused curved postmedial line from costa to vein 4.

Hab. Cape Colony, Deelfontein (*Sloggett*), 1 ♂ type. *Exp.* 36 millim.

Genus **PINACOPLUS**, nov.

Type, *P. didymogramma*.

Proboscis fully developed; palpi porrect, hardly reaching beyond the frons and moderately fringed with scales below; frons with long shovel-shaped plate rather hollowed out above and with curved corneous plate below it; eyes large, round; antennæ of female ciliated; thorax clothed with hair and scales mixed and without crests; tibiæ slightly fringed with hair, the fore tibiæ with long curved claw from inner side; abdomen without crests. Fore wing with the costa nearly straight, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

4603. **Pinacoplus didymogramma.**

Mycteroplus didymogramma, Ersch. Fedtsch. Reis. p. 44, pl. 3. f. 43 (1874); Staud. Cat. Lep. pal. p. 222.

♀. Head and thorax white; palpi at tips, sides of frons, antennæ and legs tinged with ochreous; abdomen white dorsally tinged with ochreous on basal half. Fore wing yellowish white; antemedial line double, rufous, rather diffused, the inner line indistinct, slightly angled outwards on median nervure; postmedial

Fig. 90.—*Pinacoplus didymogramma*, ♀. ½.

line double, rather diffused, the outer line indistinct, oblique, slightly excurved beyond lower angle of cell and bent outwards to inner margin, the veins beyond it slightly streaked with rufous; cilia tinged with rufous. Hind wing white faintly tinged with yellow and with traces of curved rufous postmedial line.

Hab. W. Turkestan, Turcomania (*Erschoff*), 1 ♀, Ferghana. *Exp.* 40 millim.

Genus **METOPOPLUS.**

Type.

Metopoplus, Alph. Iris, vi. p. 92 (1892) ..... *excelsa*.

Proboscis aborted, minute; palpi porrect, hardly reaching as far as frons and slightly fringed with hair below; frons with rounded corneous process from middle with raised edges and corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair, the fore tibia with long curved claw on

inner side; abdomen without crests. Fore wing with the costa nearly straight, the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with triangular white spot on antemedial line just below the cell ..... *excelsa.*
B. Fore wing without white spot on antemedial line ..... *fixseni.*

*4604. Metopoplus excelsa.

Clidia excelsa, Christ. Rom. Mém. ii. p. 205, pl. 13. f. 4 (1885); Staud. Cat. Lep. pal. p. 222.

♀. Head, thorax, and abdomen yellow. Fore wing yellow mixed with some brown and white; subbasal line dark brown defined by reddish brown on outer side, from costa to vein 1; antemedial line dark brown, slightly sinuous, interrupted just below the cell by a small triangular pure white spot defined by dark brown; orbicular and reniform absent; a diffused reddish-brown medial shade; postmedial line dark brown, excurved below costa and at middle, then slightly sinuous; a diffused red-brown band beyond it expanding to near termen between veins 7 and 6 and to termen between veins 5 and 4; cilia chequered pale yellow and reddish brown. Hind wing pale yellow.

Hab. Armenia; Persia, Schahkuh. *Exp.* 42 millim. This species is unknown to me.

4605. Metopoplus fixseni.

Metopoplus fixseni, Christ. Iris, vi. p. 92 (1893); Alph. Rom. Mém. ix. p. 221, pl. 8. f. 6; Staud. Cat. Lep. pal. p. 222.

♂. Head and thorax yellowish white tinged with ochreous; fore femora brown above; tarsi banded with brown; abdomen yellowish

Fig. 91.—*Metopoplus fixseni*, ♂. ½.

white dorsally suffused with brown. Fore wing pale yellow, the ante- and postmedial areas suffused with brownish ochreous; antemedial line rufous, double, the inner line indistinct, curved; a medial brownish ochreous shade; postmedial line rufous, double, the outer line indistinct, slightly excurved below costa and at median nervules, incurved at discal fold and below vein 3 and bent

outwards to inner margin; subterminal line only defined by the contrast between the postmedial and terminal areas, angled outwards at veins 7, 6, 4, 3; the veins of terminal area slightly streaked with brown; a fine brown terminal line; cilia with series of rufous spots at tips. Hind wing yellowish white; an indistinct sinuous postmedial line and pale rufous terminal band from apex to vein 1; a red-brown terminal line. Underside of fore wing with rufous suffusion in cell leaving a round whitish orbicular stigma, the postmedial band rufous; hind wing faintly tinged with rufous.

Hab. W. Turkestan, Turcomania, Achal Tekké, 1 ♂. *Exp.* 36 millim.

Genus **MYCTEROPLUS.**

	Type.
Mycteroplus, Herr.-Schäff. Eur. Schmett. ii. p. 242 (1849) ...	*puniceago.*
Stephania, Guen. Noct. ii. p. 172 (1852)	*puniceago.*

Proboscis aborted, small; palpi porrect, hardly extending beyond the frons and fringed with long hair below; frons with round corneous prominence with raised edges and curved corneous plate below it; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests; tibiæ fringed with long hair, the fore tibia short and rather dilated, the 1st joint of tarsus with four curved claws on outer side longer at extremity; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

4606. **Mycteroplus puniceago.**

Xanthia puniceago, Boisd. Gen. & Ind. Meth. p. 146 (1840); Dup. Lép. Fr., Suppl. iv. p. 234, pl. 70. f. 5; Herr.-Schäff. Eur. Schmett., Noct. ff. 43, 436; Frr. Neue Beitr. pl. 516. f. 4; Guen. Noct. ii. p. 173, pl. 9. f. 8; Mill. Icones, iii. pl. 139. ff. 6, 7; Alph. Iris, viii. p. 175 (fig.); Staud. Cat. Lep. pal. p. 222.

Mycteroplus viridicolor, Krul. Rev. Russe, Ent. i. p. 237 (1901).

Head and thorax pale yellow suffused with rufous; pectus and legs pale yellow, the fore legs tinged with rufous; abdomen white

Fig. 92.—*Mycteroplus puniceago*, ♂. ½.

dorsally tinged with rufous at base. Fore wing pale yellow sligh suffused with rufous; a faint subbasal rufous striga from costa

point on median nervure; slight obliquely placed antemedial rufous points on costa and inner margin and a dark point in submedian fold; a rufous medial band diffused on outer side, oblique from costa to lower angle of cell, then somewhat incurved; a postmedial dark point in discal fold; an indistinct diffused subterminal rufous band, excurved between veins 7 and 2. Hind wing pure white.

Ab. 1. *viridicolor*. Fore wing greenish; hind wing greenish white.

Hab. Rumelia; S. Russia, Odessa, Zeller Coll., Sarepta (*Christoff*), Zeller, Frey, and Leech Colls.; Armenia; W. Turkestan, Turcomania. *Exp.* 40 millim.

Larva. Kirby, Butt. & Moths Eur. p. 164; Hffm. Raup. p. 105, pl. 29. f. 3.

Reddish yellow mottled with red and with red lateral line. Food-plants: seeds of *Atriplex nitens* and *Chenopodium polyspermum*.

Genus **PSECTROTARSIA**, nov.

Type, *P. fuscirena*.

Proboscis fully developed; palpi porrect, reaching to just beyond frons and fringed with hair below, the 3rd joint short; frons with rounded corneous prominence with slight raised edges and corneous plate below it; eyes large, rounded; antennæ of male ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; fore tarsi with seven curved claw-like spines on outer side of 1st joint; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with the basal and postmedial areas white irrorated with brown ..... *fuscirena*.
B. Fore wing wholly yellow ..... *flava*.

4607. Psectrotarsia fuscirena, n. sp.

♂. Head and thorax ochreous white; antennæ pale brown; pectus white; legs yellowish, the tarsi brownish; abdomen

Fig. 93.—*Psectrotarsia fuscirena*, ♂. ½.

ochreous white slightly irrorated with brown. Fore wing with the basal, costal, and postmedial areas ochreous white irrorated

with brown, the medial area bright lemon-yellow except at costa and on the veins, the terminal area pale yellow; orbicular white with brown-irrorated centre, oblique elliptical, a small blackish spot below it in submedian fold; reniform an oblique blackish lunule with white annulus; cilia pale yellow mixed with brown at tips. Hind wing pure white.

Hab. Argentina, Mendoza, Trofero Sosa (*Bayne*), 1 ♂ type. *Exp.* 30 millim.

*4608. **Psectrotarsia flava.** (Plate CXLII. fig. 12.)

Psectrotarsia flava, Dogn. Ann. Soc. Ent. Belg. li. p. 240 (1907).

♀. Head, thorax, and abdomen yellow. Fore wing yellow, the costa and postmedial area suffused with rufous; antemedial line rufous, obliquely curved from costa to vein 1, then strongly bent outwards; orbicular slightly defined by rufous on outer side; reniform a diffused rufous patch with some fuscous and grey at middle; an oblique waved rufous line from lower angle of cell to inner margin; postmedial line rufous, very minutely waved, excurved below costa, then oblique; the postmedial area with some fuscous suffusion from costa to vein 6; subterminal line slight, rufous, somewhat excurved below vein 7 and at middle; some slight dark points on apical part of termen; cilia yellow at base, rufous at tips. Hind wing pale yellow, with slight discoidal lunule, curved postmedial line, and diffused subterminal band. Underside of fore wing with the discoidal patch blackish, a rather diffused postmedial line from costa to vein 3 and diffused subterminal band; hind wing with the costal area irrorated with rufous, a slight dark discoidal spot and curved postmedial line from costa to vein 4.

Hab. Peru, Trujillo, type † ♀ in Coll. Dognin. *Exp.* 32 millim.

Genus **DICYCLA.**

	Type.
Dicycla, Guen. Noct. ii. p. 7 (1852)	*oo.*
Eugramma, Steph. Cat. Brit. Lep. p. 110 (1856), non descr.	*oo.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male bipectinate with short branches, the apex serrate; thorax smoothly clothed with hair and hair-like scales and without crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen slightly crenulate and rather oblique towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4609. Dicycla oo.

Bombyx oo, Linn. Syst. Nat. ed. x. p. 507 (1758); Esp Schmett. iii. pl. 71. ff. 2–5; Dup. Lép. Fr. vi. p. 174. pl. 84. ff. 2, 3; Geyer, Eur. Schmett., Noct. f. 867; Frr. Neue Beitr. pl. 454; Steph. Ill. Brit. Ent., Haust. iii. p. 59; Staud. Cat. Lep. pal. p. 203.
Noctua ferruginago, Hübn. Eur. Schmett., Noct. f. 195 (1802).
Noctua renago, Haw. Lep. Brit. p. 238 (1809).
Dicycla sulphurea, Staud. Cat. Lep. pal. p. 203 (1901).
Dicycla griseago, Schultz, Soc. Ent. xxi. p. 3 (1907).

Head and thorax very pale yellow, the vertex of head with a few blackish scales and the thorax tinged with red-brown except in front; palpi with the 2nd joint red-brown at sides; antennæ red-brown except at base; pectus and legs with red-brown mixed; abdomen whitish slightly tinged with rufous except at base. Fore wing very pale yellow irrorated with rufous, the veins streaked

Fig. 94.—*Dicycla oo*, ♂. ½.

with rufous, the basal area suffused with rufous except at base of costa, and the postmedial area tinged with rufous; subbasal line red-brown defined by yellow on outer side, waved, from costa to submedian fold; antemedial line red-brown defined by yellow on inner side, waved, excurved below costa, then oblique; claviform defined by red-brown, small, elliptical; orbicular and reniform defined by red-brown, the former small, round, the latter rather rounded with slight rufous lunule in centre; medial line rather diffused, red-brown, obliquely excurved to median nervure, then oblique; postmedial line red-brown defined by yellow on outer side, oblique to vein 6, then very minutely waved, excurved to vein 4, then incurved; subterminal line formed of small brown lunules, slightly excurved below vein 7, then almost straight, a brown mark beyond it above and below vein 5; a red-brown terminal line; cilia pale yellow intersected with red-brown. Hind wing yellowish white, the veins faintly tinged with red-brown; a pale red-brown terminal line: cilia pale yellow; the underside with the costal area slightly yellower.

Ab. 1. *renago*. Fore wing with the basal and postmedial areas suffused with fuscous brown.

Ab. 2. *sulphurea*. Fore wing nearly uniform pale yellow.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary, Leech Coll.; Switzerland; N.W. Spain (*Chapman*); Italy; Dalmatia, Leech Coll.; S. Scandi-

NAVIA; RUSSIA, Sarepta (*Christoff*); ARMENIA; ASIA MINOR, Pontus, Taurus, Amanus Mts., 1 ♂; SYRIA, 1 ♂, Mardin; PERSIA; W. SIBERIA. *Exp.* 34–40 millim.

Larva. Meyr. Brit. Lep. p. 118; Barrett, Lep. Brit. v. p. 312, pl. 223. f. 3. Blackish; an irregular dorsal and slender subdorsal white line; spiracular line broad, yellowish white, traversed by a fine dark line; dots white; head black. Food-plant, Oak; among leaves spun together. 4–5.

Genus **ENARGIA**.

	Type.
Enargia, Hübn. Verz. p. 235 (1827)	*paleacea*.
Euperia, Guen. Ann. Soc. Ent. Fr. 1841, p. 242, non descr.; id. Noct. ii. p. 5 (1852)	*paleacea*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male typically ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base and lateral fringes of hair but without crests. Fore wing with the apex rather produced and acute, the termen slightly crenulate and oblique towards tornus; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked or from angle; 8 anastomosing with the cell near base only.

SECT. I. Antennæ of male bipectinate with rather long branches, the apical part serrate.

A. Fore wing with the antemedial line very oblique.
  a. Fore wing with the postmedial line slightly excurved from below costa to vein 4 ..... *ulicis*.
  b. Fore wing with the postmedial line straight from below costa to vein 4 ..... *regina*.
B. Fore wing with the antemedial line almost erect ..... *borjomensis*.

4610. **Enargia ulicis**.

Cosmia ulicis, Staud. Stett. ent. Zeit. 1859, p. 214; Herr.-Schäff. Neue Schmett. ff. 121, 122; Rmbr. Cat. Lep. S. And. pl. 11. f. 6; Staud. Cat. Lep. pal. p. 204.

♀. Head and thorax crimson-red mixed with some whitish; pectus, mid femora, and hind legs whitish; abdomen whitish suffused with crimson except at base. Fore wing crimson-red, the base and basal half of costal area with a whitish tinge; an oblique red antemedial line defined by whitish on inner side; orbicular a faint minute whitish annulus; reniform narrow, defined by whitish except on outer side where it is hardly traceable, and with a blackish bar on inner edge of centre; postmedial line red defined by whitish on outer side, bent outwards below costa, excurved to vein 4, then oblique to inner margin near antemedial line; subterminal line very indistinct, whitish, defined on inner side by black scales from costa to below vein 7, where it is angled

outwards; a slight pale line at base of cilia. Hind wing white suffused with pink except at base, in cell, and on costal area; cilia white tinged with pink at tips; the underside white, the costal and terminal areas irrorated with pink, an indistinct curved postmedial line.

The male is more red-brown and the female may be olive-brown.

Hab. Spain, Andalusia, Catalonia; Syria, Eibes, 1 ♀. *Exp.* 38 millim.

4611. Enargia regina.

Cosmia regina, Staud. Iris, iv. p. 297, pl. 4. f. 2 (1891); id. Cat. Lep. pal. p. 204.

♂. Head and thorax ochreous yellow slightly tinged with rufous; palpi pinkish at sides; antennæ rufous; tibiæ and tarsi strongly tinged with rufous; abdomen ochreous white suffused with rufous. Fore wing ochreous yellow tinged with rufous, more strongly on medial area; a blackish subbasal point in cell; antemedial line indistinct, rufous defined by whitish on inner side, very

Fig. 95.—*Enargia regina*, ♂. ½.

oblique and almost straight; orbicular and reniform with rufous centres and pale ochreous annuli, the former small, oblique elliptical, the latter oblong, the inner side of centre suffused with blackish; postmedial line indistinct, rufous defined by yellowish white on outer side, slightly bent outwards below costa and oblique below vein 4; subterminal line yellowish white with three small black spots on inner side below costa, slightly bent inwards at discal fold, excurved, minutely waved and faintly defined by brown on outer side at middle; cilia more strongly tinged with rufous, with faint yellowish lines at base and middle. Hind wing white, the inner and terminal areas tinged with pink; cilia pale yellow, whitish at tips; the underside with the costal and terminal areas slightly irrorated with rufous, a slight discoidal spot and curved postmedial line.

♀. Head, thorax, and fore wing rufous, the last with the medial area bright rufous; hind wing suffused with brown.

Hab. Algeria, Le Tarf, 1 ♀; Cyprus (*Miss Bate*), 2 ♂, 1 ♀; Asia Minor, Pontus, 1 ♂, Taurus; W. Turkestan, Ala Tau; E. Siberia, Amurland. *Exp.* 40–42 millim.

*4612. Enargia borjomensis.

Cirrœdia borjomensis, Christ. Rom. Mém. ii. p. 61, pl. 3. f. 6 (1885); Staud. Cat. Lep. pal. p. 204.

♀. Head white, the palpi and frons reddish brown; thorax reddish yellow; pectus reddish white, the legs and abdomen pale red. Fore wing yellowish suffused with red; a subbasal black point; antemedial line dark, almost erect; reniform black-brown, quadrate; postmedial line dark, excurved from costa to vein 4, then incurved. Hind wing yellowish white tinged with reddish, especially on terminal area; a pale curved postmedial line; cilia white.

Hab. Armenia, Borjom. *Exp.* 40 millim. This species is unknown to me.

Sect. II. Antennæ of male ciliated.

A. Fore wing with the ante- and postmedial lines not defined by white.
  a. Fore wing with the antemedial line oblique, waved ... *staudingeri*.
  b. Fore wing with the antemedial line oblique from costa to submedian fold, where it is more or less angled.
    a^1. Fore wing yellow slightly irrorated with rufous..... *paleacea*.
    b^1. Fore wing whitish to yellow or flesh-red thickly irrorated with rufous or dark brown ..... *decolora*.
B. Fore wing with the ante- and postmedial lines defined by white.
  a. Fore wing yellow more or less irrorated and suffused with rufous... ..... *imbuta*.
  b. Fore wing yellowish white more or less irrorated and suffused with brown ..... *abluta*.

*4613. Enargia staudingeri. (Plate CXLII. fig. 13.)

Hiptelia staudingeri, Alph. Hor. Ent. Soc. Ross. xvii. p. 86, pl. 3. f. 60 (1882); Staud. Cat. Lep. pal. p. 204.

Head and thorax pale yellow tinged with rufous; antennæ white; abdomen yellowish white slightly tinged with rufous. Fore wing pale yellow thickly irrorated with rufous, the veins irrorated with a few dark scales; subbasal line represented by an indistinct rufous striga from costa; antemedial line rufous, oblique, waved, bent inwards to costa and incurved at vein 1; orbicular and reniform slightly defined by rufous, the former round, the latter rather produced at upper extremity and with slight dark mark at lower angle of cell; postmedial line rufous slightly defined on outer side by whitish, minutely waved, oblique to vein 6 and below vein 3; subterminal line slightly defined on inner side by rufous suffusion, somewhat excurved below vein 7 and at middle; a terminal series of slight dark points; cilia with a slight whitish line at base. Hind wing yellowish white, the terminal area faintly tinged with rufous; a fine curved postmedial line and slight terminal line; cilia white; the underside with the

costal area and terminal area to vein 3 tinged and irrorated with rufous, a discoidal point and sinuous rufous postmedial line.

Hab. W. Turkestan, Merv, Issyk-kul; E. Turkestan, Ili, Alexander Mts. in Coll. Püngeler. *Exp.* 40 millim.

4614. Enargia paleacea.

Noctua paleacea, Esp. Schmett. iv. pl. 122. ff 3, 4 (1788); Staud. Cat. Lep. pal. p. 204.
Noctua fulvago, Hübn. Eur. Schmett., Noct. ff. 198-9 (1802), nec Linn.; Dup. Lép. Fr. vii. pt. 1. p. 125, pl. 109. f. 1; Steph. Ill. Brit. Ent., Haust. iii. p. 62.
Noctua angulago, Haw. Lep. Brit. p. 239 (1809).
Cosmia teichi, Krul. Bull. Mosc. 1893, p. 81.
Cosmia fusca, Schultz, Soc. Ent. xiv. pp. 139, 165 (1899).

Head and thorax bright yellow tinged with rufous; pectus mixed with white; abdomen white tinged with yellow except at base. Fore wing orange-yellow slightly irrorated with red; subbasal line red, from costa to submedian fold; antemedial line red, oblique from costa to submedian fold, then inwardly oblique; orbicular and reniform large, defined by red, the former round, the latter with red-brown spot in lower part; medial line rather diffused, rufous, oblique from costa to reniform, inwardly oblique from lower angle of cell to inner margin; postmedial line red,

Fig. 96.—*Enargia paleacea*, ♂. ½.

oblique from costa to vein 6 and below vein 4; subterminal line faint, diffused, rufous, excurved below vein 7 and at middle; a terminal series of small red-brown lunules, almost obsolete at apex and between veins 4 and 2. Hind wing very pale yellow; the underside with faint reddish discoidal spot, slight curved postmedial line from costa to vein 2, and series of slight terminal lunules from apex to vein 2.

Ab. 1. *teichi*. Fore wing with the medial and terminal areas tinged with fuscous.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; N. Italy; Russia, Livonia, Zeller Coll., Sarepta, Leech Coll.; W. Turkestan, Ala Tau; W. Siberia, Altai; Mongolia, Changai Mts.; E. Siberia, Amurland, Ussuri. *Exp.* 40–46 millim.

Larva. Meyr. Brit. Lep. p. 118; Barrett, Lep. Brit. v. p. 308, pl. 223. f. 2. Pale dull green irrorated with white; segmental incisures yellowish; dorsal and subdorsal lines white; spiracular line double, white; spiracles edged with purple; head pale yellow. Food-plants: Birch, Oak. 5–6.

4615. Enargia decolora. (Plate CXLII. fig. 14.)

Mythimna decolor, Wlk. xv. 1658 (1859).
Orthosia infumata, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 160 (1874).
Cosmia punctirena, Smith, Can. Ent. xxxii. p. 222 (1900); Dyar, Cat. Lep. N. Am. p. 179.
Cosmia discolor, Smith, Cat. Noct. N. Am. p. 214 (1893).

Head and thorax orange-red mixed with yellowish; palpi brownish mixed with white; pectus and legs white tinged with brown; abdomen ochreous white dorsally suffused with brown, the anal tuft and ventral surface tinged with rufous. Fore wing orange-red slightly irrorated with brown; subbasal line brown, from costa to submedian fold; antemedial line brown, oblique from costa to submedian fold, then inwardly oblique; orbicular and reniform large, defined by brown, the former large, the latter with blackish spot at lower angle of cell; a diffused fuscous medial shade, oblique from costa to reniform and incurved from lower angle of cell to inner margin; postmedial line brown, oblique from costa to vein 6 and incurved below vein 4; a broad oblique fuscous brown shade from costa before subterminal line to lower angle of cell; subterminal line yellowish, excurved at vein 7 and at middle; terminal area suffused with fuscous brown except at apex; a terminal series of slight dark points; cilia red-brown, whitish at tips. Hind wing very pale yellow with a faint reddish tinge; a faint curved postmedial line and traces of a diffused subterminal line; cilia whitish at tips; the underside with the costal and terminal areas slightly irrorated with red-brown, a small brownish discoidal spot and indistinct curved postmedial line.

Ab. 1. *infumata.* Head, thorax, and fore wing much greyer, thickly irrorated with fuscous.

Ab. 2. Fore wing yellowish white with slight dark irroration.

Ab. 3. Fore wing pale yellow irrorated with red, the markings reddish.

Hab. Canada (*Norman*), 1 ♀, Renfrew Co., 1 ♂, Ontario, Orilla (*Bush*), 1 ♂ type, Manitoba, Aweme (*Criddle*), 1 ♂, Cartwright (*Heath*), 3 ♂, 2 ♀, Alberta, Calgary (*Wolley-Dod*), 10 ♂, 4 ♀; U.S.A., New York, 1 ♂, 2 ♀, Albany (*Hill*), 1 ♀, Malawqua Co., 1 ♂, 1 ♀ type *infumata*, California, Lr. Klamath R. (*Walsingham*), 2 ♂. *Exp.* 38–46 millim.

Larva. Coquillet, J. N.Y. Ent. Soc. x. p. 169.

Green; dorsal, subdorsal, and less distinct substigmatal whitish lines; warts and spiracles white, the latter ringed with black; ventral surface and legs green; head yellowish green. Food-plant: *Populus trichocarpa.* 4.

4616. Enargia imbuta.

Cosmia imbuta, Boisd. Gen. & Ind. Meth. p. 143 (1840); Frr. Neue Beitr. pl. 359. ff. 2, 3; Herr.-Schäff. Eur. Schmett., Noct. ff. 112, 115–6; Staud. Cat. Lep. pal. p. 204.
Cosmia rufula, Staud. Cat. Lep. Eur. p. 115 (1871).
Cosmia arenaria; Bartel, Iris, xv. p. 210 (1902).

Head and thorax pale ochreous yellow faintly tinged with rufous; palpi and antennæ more strongly tinged with rufous; pectus with white mixed; abdomen ochreous white. Fore wing pale ochreous yellow slightly tinged with rufous; subbasal line absent; faint traces of a curved rufous antemedial line; orbicular and reniform absent; a rufous point at lower angle of cell; traces of an oblique rufous line from lower angle of cell to inner margin; postmedial line rufous, excurved to vein 4, then slightly incurved; subterminal line absent; cilia rufous at base, white at tips. Hind wing yellowish white, the inner half tinged with rufous; cilia ochreous at base, white at tips; the underside ochreous white.

Ab. 1. *rufula.* Fore wing suffused with bright rufous, the lines and stigmata clearly defined by pale yellow.

Ab. 2. *arenaria.* Fore wing with the terminal half irrorated with fuscous, strongly in female.

Hab. S. Russia, Sarepta, Zeller, Frey, and Leech Colls. *Exp.* 36–42 millim.

4617. Enargia abluta.

Noctua abluta, Hübn. Eur. Schmett., Noct. f. 351 (1808); Dup. Lép. Fr., Suppl. iii. p. 327, pl. 30. f. 3; Staud. Cat. Lep. pal. p. 204.
Euperia glaucula, Guen. Noct. ii. p. 5 (1852).

Head and thorax yellowish white slightly mixed with brown; palpi with the 2nd joint brownish above; antennæ brownish; abdomen yellowish white faintly tinged with brown. Fore wing yellowish white slightly irrorated with brown especially on terminal half; subbasal line represented by a slight brown striga from costa; antemedial line pale brown, oblique from costa to submedian fold, then nearly erect; orbicular and reniform with very faint whitish annuli, the former small, oblique elliptical, the latter with round fuscous spot at lower angle of cell; a faint curved diffused brownish medial shade; postmedial line pale brown defined by white on outer side and with slight dark point at costa, oblique from costa to vein 6 and slightly incurved below vein 4; an indistinct whitish subterminal line excurved below vein 7 and at middle; cilia with brownish line at middle. Hind wing white faintly tinged with brown except on costal area and termen; an indistinct curved postmedial line; a slight brown terminal line; the underside white, a slight brown postmedial line from costa to vein 6.

Ab. 1. *glaucula.* Fore wing suffused with grey-brown, the lines and stigmata clearly defined by white.

Hab. Austria; Hungary, Zeller, Frey, and Leech Colls.; ? N. Italy; ? Russia, Urals. *Exp.* 34–42 millim.

Larva. Kirby, Butt. & Moths Eur. p. 185; Hffm. Raup. p. 115.

Green with fuscous dorsal stripes; head brown. Food-plant: *Populus alba.* 7–8.

Genus DERRIMA.

	Type.
Derrima, Wlk. xii. 770 (1857)	*stellata.*
Philomma, Grote, Proc. Ent. Soc. Phil. iii. p. 2 (1864)	*stellata.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint not reaching middle of frons and moderately fringed with hair in front, the 3rd short; frons with slight rounded prominence with corneous plate below it; eyes large, round; antennæ of male serrate; thorax clothed with hair overlying scales and without crests; tibiæ moderately fringed with hair, the fore tibiæ with long curved claw on inner side and two claws on outer; abdomen without crests. Fore wing short and broad, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4618. Derrima stellata.

Derrima stellata, Wlk. xii. 770 (1857).
Philomma henrietta, Grote, Proc. Ent. Soc. Phil. iii. p. 3, pl. 2. f. 1 (1864); Smith, Cat. Noct. N. Am. p. 271.

(*henrietta*). Head and thorax bright crimson-pink, the metathorax yellowish, the antennæ whitish tinged with crimson, the pectus ochreous except in front, the legs crimson; abdomen ochreous tinged with crimson. Fore wing olive-yellow, the costal and terminal areas broadly bright crimson-pink; an antemedial

Fig. 97.—*Derrima stellata*, ♂. ½.

round silvery white spot below the cell defined by black and ringed with crimson and a similar discoidal spot; postmedial line represented by a series of white points on inner edge of the pink terminal area, excurved from costa to vein 6, then oblique. Hind wing ochreous yellow. Underside of fore wing with the disk suffused with fuscous brown; hind wing with the costa suffused with pink.

Ab. 1. Fore wing with the ocellate spot below the cell centred with grey.

Ab. 2. *stellata.* Fore wing with the two spots not ringed with pink, the postmedial series of white points more prominent; hind wing almost wholly suffused with pink.

Hab. U.S.A. (*Doubleday*), 1 ♀ type, Massachusetts (*Grote*), 2 ♂, 6 ♀, New York, Rhode I., 1 ♂, South to Florida and West to Mississippi States. *Exp.* 24–30 millim.

Genus STIRIA.

Type.

Stiria, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 73 (1874) ..... *rugifrons.*

Proboscis fully developed; palpi obliquely porrect, extending to just beyond the frons, the 2nd joint moderately fringed with hair below, the 3rd short; frons with large heart-shaped corneous prominence with raised edges, its lower edge produced to a point, a corneous plate below it; eyes large, round; antennæ of male laminate and minutely ciliated; thorax clothed with rough scales, the pro- and metathorax with spreading crests, the patagia curled upwards at extremity; tibiæ moderately fringed with hair, the fore tibiæ with large curved claw on inner side; abdomen without crests. Fore wing with the apex produced and acute, the termen oblique below vein 4 and crenulate, the tornus with slight scale-tooth; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with grey-brown patch on medial inner area.
  a. Fore wing yellow.
    a^1. Fore wing with the patch on medial area large and irregularly quadrate..... *rugifrons.*
    b^1. Fore wing with the patch on medial area much smaller and conical ..... *sulphurea.*
  b. Fore wing grey-white ..... *consuela.*
B. Fore wing without grey-brown patch on medial inner area.
  a. Fore wing with broad pale medial band ..... *hutsoni.*
  b. Fore wing without pale medial band ..... *fuliginosa.*

4619. Stiria rugifrons.

Stiria rugifrons, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 73 (1874); Druce, Biol. Centr.-Am., Het. ii. p. 484, pl. 94. f. 9; Smith, Cat. Noct. N. Am. p. 262.

Palpi and frons whitish mixed with brown, vertex of head pale yellow, antennæ brownish; thorax brown mixed with white and black, the tegulæ pale yellow towards base; pectus and legs whitish mixed with brown; abdomen yellowish white. Fore wing greenish yellow faintly irrorated with brown; a slight brown subbasal line from costa to vein 1 and a diffused brown patch above inner margin; a brown point in cell before the antemedial line, which is indistinct, oblique and sinuous to submedian fold, then inwardly oblique and angled inwards on vein 1; medial area with large red-brown patch from submedian fold to inner margin; orbicular hardly defined except by brown striæ on inner and outer

sides above discal fold; reniform represented by a small brown discoidal lunule and points on inner edge in upper part of cell and on median nervure and on outer edge beyond upper angle of cell; post-medial line indistinct, brownish, dentate, oblique below vein 6 and

Fig. 98.—*Stiria rugifrons*, ♂. ½.

bent outwards below submedian fold; terminal area suffused with reddish brown from below apex where it narrows to a point to below vein 2; a brown terminal line; cilia brown mixed with whitish. Hind wing yellowish white, with slight reddish-brown terminal line from apex to vein 2.

Hab. U.S.A., Kansas, 1 ♀ type, Colorado, Denver, New Mexico, Albuquerque Mts. (*Oslar*), 2 ♂, 2 ♀; Mexico, Durango (*Becker*), 1 ♂, Godman-Salvin Coll. *Exp.* 42–50 millim.

4620. **Stiria sulphurea.** (Plate CXLII. fig. 15.)

Stiria sulphurea, Neum. Papilio, ii. p. 135 (1882); Smith, Cat. Noct. N. Am. p. 262.

Head and front of thorax pale yellow, the palpi, frons, and antennæ reddish brown; hind part of thorax reddish brown mixed with whitish; pectus and legs yellow tinged with red-brown; abdomen yellow tinged with brown. Fore wing greenish yellow; a patch of reddish-brown suffusion on basal inner area; a subbasal blackish point in cell; a conical reddish-brown patch on middle of inner margin defined by darker brown; orbicular represented by blackish points on its inner and outer sides in upper part of cell, the reniform by a blackish discoidal point and points in and beyond upper and lower angles of cell; postmedial line indistinct, dark, oblique to vein 7, then waved, obliquely curved to the conical patch and traversing its middle; terminal area suffused with reddish brown from below apex where it narrows to a point to below vein 2; a slight brown terminal line; cilia brown with a slight pale line at base. Hind wing white tinged with reddish brown especially on terminal area; cilia white faintly tinged with brown. Underside of fore wing brown, the costa, apical area, and termen yellowish; hind wing white, the terminal area slightly irrorated with brown, traces of a diffused curved subterminal line.

Ab. 1. Fore wing with the points representing orbicular and reniform except discoidal point and the postmedial line absent.

Hab. U.S.A., Arizona, 1 ♂, Prescott (*Kunzé*), 11 ♂, 3 ♀. *Exp.* 34–36 millim.

*4621. Stiria consuela.

Stiria consuela, Streck. Lep. Rhop. & Het., Suppl. 3. p. 34 (1900); Dyar, Cat. Lep. N. Am. p. 196.

♀. Head and tegulæ greyish white; thorax and abdomen pale ash-grey, the latter paler towards extremity. Fore wing greyish white shading to purplish grey on terminal area, the base very faintly tinged with yellow; a minute discoidal point; a large grey patch on medial inner area; postmedial line bent outwards below costa, then even and obliquely curved; cilia pale grey. Hind wing pale purplish grey: cilia pure white. Underside of fore wing grey with the costa and termen white; hind wing pure white.

Hab. U.S.A., Arizona. *Exp.* 34 millim. This species is unknown to me.

4622. Stiria hutsoni. (Plate CXLII. fig. 16.)

Stibadium hutsoni, Smith, Trans. Am. Ent. Soc. xxxiii. p. 140 (1907).

♂. Head whitish; thorax pale olive-grey; abdomen brownish. Fore wing bright olive-grey; a broad pale medial band not quite extending to costa; a narrower diffused pale band from apex to inner margin beyond middle, slightly waved and less distinct at apex; an indistinct diffused pale terminal band; cilia olive. Hind wing uniform fuscous brown; the underside whitish with an ochreous tinge.

Hab. U.S.A., California, Walters' Station, Arizona, Yuma Co., Prescott, 1 ♂. *Exp.* 20–22 millim.

4623. Stiria fuliginosa. (Plate CXLII. fig. 17.)

Stibadium fuliginosa, Smith, Trans. Am. Ent. Soc. xxxiii. p. 140 (1907).

Head and thorax white with a faint brown tinge; antennæ and tarsi brown; abdomen red-brown. Fore wing whitish strongly suffused with red-brown to the postmedial line, the terminal area white irrorated with brown; postmedial line rather diffused, white, arising from costa near apex, very oblique, slightly incurved below vein 4; a diffused oblique white subterminal line from vein 7 to inner margin; a fine brown terminal line. Hind wing red-brown irrorated with whitish, the underside white slightly irrorated with brown.

Hab. U.S.A., California, Walters' Station, 1 ♂, 1 ♀, Arizona, Phœnix. *Exp.* 22 millim.

Genus XANTHIRIA, nov.

Type, *X. primulina.*

Proboscis fully developed; palpi obliquely upturned, hardly reaching to middle of frons and slightly fringed with hair in front; frons with rounded prominence with corneous plate below it; eyes large, round; antennæ of male

laminate and ciliated; thorax clothed with hair and scales mixed, the prothorax without crest, the metathorax with spreading crest, the patagia curled upwards at extremities; tibiæ smoothly scaled, the fore tibiæ with small curved claw on inner side at extremity; abdomen without crests. Fore wing with the apex somewhat produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from well below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

4624. Xanthiria primulina.

Metoponia primulina, Druce, Biol. Centr.-Am., Het. i. p. 303, pl. 28. f. 10 (1889).

♂. Head, tegulæ, and front of thorax bright yellow, the rest of thorax deep rufous; palpi, frons, antennæ, pectus, and legs tinged with rufous, the sides of frons dark brown: antennæ rufous, ventrally yellow tinged with rufous. Fore wing bright yellow with deep rufous fascia on base of inner margin expanding into slight teeth at middle and extremity; the costal edge tinged with rufous to beyond middle; a subbasal black point in cell; an antemedial black point in upper part of cell; the orbicular represented

Fig. 99.—*Xanthiria primulina*, ♂. ½.

by two black points, the reniform by two points on its inner edge and one beyond upper angle of cell; faint traces of a rufous postmedial line excurved from vein 7 to 4, then obliquely incurved, with a brown point on inner margin; a subterminal brown point on inner margin. Hind wing yellowish white suffused with brown; cilia yellow. Underside of fore wing brown, the costa yellow tinged with rufous; hind wing white tinged with brown especially on terminal area, traces of a diffused curved postmedial line.

Hab. Mexico, Guerrero, Omilteme (*H. H. Smith*), 3 ♂ type, Godman-Salvin Coll. *Exp.* 36 millim.

Genus **STIRIODES**, nov.

Type, *S. obtusa*.

Proboscis aborted, small; palpi obliquely porrect, extending to just beyond the frons, the 2nd joint slightly fringed with hair, the 3rd short, porrect; frons with rounded prominence with large flattened corneous plate at middle and curved plate below it; eyes large, round; antennæ of male laminate and ciliated; thorax clothed almost entirely with scales, the prothorax without

distinct crest, the metathorax with spreading crest; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing yellowish white.
  a. Fore wing without conical brown spot on middle of inner margin ..... *obtusa.*
  b. Fore wing with conical brown spot on middle of inner margin ..... *perflava.*
B. Hind wing dark brown.
  a. Fore wing bright yellow ..... *demo.*
  b. Fore wing ochreous tinged with rufous ..... *procida.*
  c. Fore wing deep rufous ..... *umbria.*

4625. Stiriodes obtusa.

Metoponia obtusa, Herr.-Schäff. Aussereur. Schmett. p. 68, f. 210 (1853); Smith, Cat. Noct. N. Am. p. 316.
Metoponia obtusula, Zell. Verh. zool.-bot. Ges. Wien, xxiii. p. 204, pl. 3. f. 2 (1873).

Head and tegulæ rufous; thorax yellow, rufous in front and behind; pectus and legs yellow suffused with rufous; abdomen yellow tinged with rufous. Fore wing bright yellow tinged with rufous except on terminal area, the base of costal area rufous; a rufous antemedial spot on costa and dark point in submedian fold; a rather triangular red-brown spot on middle of costa extending into upper part of cell, an oblique red-brown bar from lower angle of cell to submedian fold and a spot on inner margin; postmedial line represented by a small red-brown spot on costa, a point further

Fig. 100.—*Stiriodes obtusa*, ♂. ½.

from base in discal fold and a point in submedian fold; a subterminal red-brown spot on costa and a series of small spots from discal fold to inner margin, excurved at vein 4. Hind wing ochreous white slightly irrorated with brown; traces of a diffused brown medial line from subcostal nervure to inner margin, an oblique postmedial line arising from vein 6 and an indistinct diffused subterminal line. Underside of fore wing suffused with red-brown except apical part of costal area, the terminal and inner areas; hind wing white irrorated with brown, the costal area yellow,

a medial red-brown band from costa to middle of discocellulars and diffused postmedial and subterminal lines.

Hab. U.S.A., Middle and Central States, Texas, 1 ♂, 1 ♀ *Exp.*, ♂ 24, ♀ 28 millim.

4626. Stiriodes perflava. (Plate CXLII. fig. 18.)

Metoponia perflava, Harv. Bull. Buff. Soc. Nat. Sci. iii. p. 11 (1875); Smith, Cat. Noct. N. Am. p. 316.

♂. Head and thorax pale yellow, the palpi, frons, antennæ, pectus, and legs suffused with rufous; abdomen yellowish white. Fore wing pale bright yellow, the costal edge tinged with rufous; a subbasal rufous point on costa; obliquely placed rufous antemedial points on costa and in submedian fold and a diffused spot on inner margin; a diffused rufous medial spot on costa; obliquely placed postmedial rufous points in discal and submedian folds and on inner margin; an oblique rufous subterminal bar from costa and traces of a curved series of points; cilia rufous at discal fold and tipped with rufous towards tornus. Hind wing white tinged with yellow especially on terminal area; the underside with the costal area tinged with yellow, a faint rufous bar from middle of costa and oblique subterminal line diffused towards costa.

Hab. U.S.A., Texas, 1 ♂ type, Kerrville, 1 ♂. *Exp.* 30 millim.

4627. Stiriodes demo.

Metoponia demo, Druce, Biol. Centr.-Am., Het. i. p. 303, pl. xxviii. f. 9 (1889).

♂. Head and thorax bright yellow slightly mixed with rufous; palpi and frons suffused with rufous; antennæ brown; pectus and legs rufous mixed with some yellow; abdomen dark brown with yellow line on last segment, the anal tuft yellow, the ventral surface yellow suffused with rufous. Fore wing bright yellow; some red-brown on base of inner margin and a subbasal point on costa; a small antemedial red-brown spot on costa and points on median nervure and vein 1; a point in middle of cell and another below it in submedian fold; a triangular red-brown patch on middle of costa and semicircular patch on inner margin; traces of a line with dark points on the veins from beyond upper angle of cell to the patch on inner margin; postmedial line double, the inner line very indistinct and reduced to points towards costa, excurved below costa, then very minutely waved and oblique below vein 4; a subterminal red-brown bar from costa and a series of points, the point in discal fold further from termen; cilia with a series of red-brown points. Hind wing dark red-brown, the cilia pale yellow. Underside of fore wing red-brown, the terminal area yellow; hind wing yellow irrorated with red-brown, a diffused red-brown medial band, oblique below discal fold, a double postmedial line excurved below costa,

then sinuous with a diffused band beyond it from costa to discal fold.

Hab. Mexico, Guerrero, Amula (*H. H. Smith*), 2 ♂ type, Godman Salvin Coll. *Exp.* 30 millim.

4628. Stiriodes procida.

Metoponia procida, Druce, Biol. Centr.-Am., Het. i. p. 304, pl. xxviii. f. 11 (1889).

Head and thorax ochreous yellow tinged with rufous; antennæ brown; palpi and legs with brown mixed; abdomen ochreous yellow dorsally suffused with brown. Fore wing ochreous slightly tinged with rufous, the basal and postmedial areas slightly irrorated with brown, the costa brown at base; antemedial line indistinct, double, waved, with dark points on its outer edge at costa, discal and submedian folds and inner margin; a triangular brown patch at middle of costa with brown shade from it to inner margin interrupted at discal and submedian folds and angled at lower angle of cell; postmedial line indistinct, double, brown, excurved, at discal and submedian folds slightly angled inwards and with dark points on its inner edge; a brown patch on costa towards apex, the rather punctiform subterminal line arising from it and slightly angled inwards at discal and submedian folds; a terminal series of brown striæ. Hind wing yellowish almost wholly suffused with dark brown, the cilia yellow; the underside yellow irrorated with brown, a brown discoidal spot with spot above it on costa, rather diffused curved postmedial line, and traces of subterminal line.

Hab. Mexico, Presidio (*Forrer*), 1 ♂, Guerrero, Tierra Colorado (*H. H. Smith*), 1 ♀ type, Godman-Salvin Coll. *Exp.*, ♂ 22, ♀ 26 millim.

4629. Stiriodes umbria.

Metoponia umbria, Druce, Biol. Centr.-Am., Het. ii. p. 491, pl. xciv. f. 28 (1898).

♂. Head and thorax deep rufous; palpi, pectus, and legs ochreous tinged with rufous; abdomen black-brown, the anal tuft at extremity and ventral surface ochreous tinged with rufous. Fore wing deep rufous; traces of a double waved antemedial line; a dark medial shade, angled outwards at discal fold, then oblique; postmedial line indistinct, excurved, with dark points before it at discal and submedian folds; a dark brown patch on costa towards apex, the brown subterminal line arising from it, excurved below vein 7 and at middle. Hind wing dark red-brown, the cilia yellow tinged with brown at base; the underside yellow irrorated with brown, an indistinct curved postmedial line.

Hab. Mexico, Morelos, Cuernavaca (*H. H. Smith*), 1 ♂; Guatemala, Volcan de Atitlan (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 22 millim.

*Genus POLENTA,

Type.
Polenta, Morr. Proc. Bost. Soc. N. H. xviii. p. 124 (1875) ..... *tepperi*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd short; frons with heart-shaped corneous prominence with raised edges, its lower edge produced to a point; eyes large, round; antennæ of male somewhat laminate and minutely ciliated; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest, the patagia somewhat curled upwards at extremities; tibiæ moderately fringed with hair, the fore tibiæ with small spine on outer side at extremities; abdomen without crests. Fore wing with the apex produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

4630. Polenta tepperi.

Schinia tepperi, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 68; Smith, Cat. Noct. N. Am. p. 263.
Plagiomimicus richii, Grote, Can. Ent. xviii. p. 99 (1886).

Head white, the palpi, frons, and antennæ tinged with olive-brown; thorax white mixed with olive-brown; fore legs suffused with brown; abdomen white dorsally tinged with brown. Fore wing white suffused with olive-brown, the inner margin with slight whitish streak; antemedial line white, straight, oblique with some deeper olive-brown suffusion before it on costa; a slight white discoidal line; postmedial line white, oblique from costa to vein 6 where it is acutely angled, then very oblique to middle of inner

Fig. 101.—*Polenta tepperi*, ♂. ½.

margin, a triangular olive-brown patch beyond it on costa bounded on outer side by the oblique white subterminal line, slightly excurved below vein 7; cilia white, tinged with brown at apex. Hind wing whitish suffused with brown, paler at base; cilia white. Underside of fore wing suffused with brown leaving the costa whitish; hind wing white tinged with brown, traces of a diffused curved postmedial line.

Hab. U.S.A., Texas, 1 ♀ type *richii*, Colorado, Arizona (*Poling*), 3 ♂, Prescott (*Kunzé*), 1 ♂, 2 ♀, Huachuca Mts., 1 ♀, Baboquavaria Mts., 1 ♂, 1 ♀. *Exp.* 24–30 millim.

* The Genera *Polenta* and *Plagiomimicus* would be better placed following *Stibadium*.

Genus PLAGIOMIMICUS.

Type.
Plagiomimicus, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 182 (1873). *pitychroma.*

Proboscis fully developed; palpi porrect, extending to just beyond frons, the 2nd joint moderately fringed with hair below, the 3rd short; frons with large round corneous prominence with raised edges and corneous plate below it; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with rough scales, the prothorax without crest, the metathorax with spreading crest, the patagia somewhat curled upwards at extremities; tibiæ moderately fringed with hair, the fore tibiæ very short and broad with large curved claw on inner side and short claw on outer; abdomen without crests. Fore wing with the apex slightly produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with triangular black-brown patch on costa before apex.
  a. Fore wing with the orbicular and reniform filled in with black-brown ..... *pitychroma.*
  b. Fore wing with the orbicular and reniform not filled in with black-brown.
    a^1. Fore wing with black-brown patch in cell between the orbicular and reniform which are obsolete ..... *triplagiata.*
    b^1. Fore wing without black-brown patch in cell between orbicular and reniform which are defined by white ... *laverna.*
B. Fore wing without triangular black-brown patch on costa before apex.
  a. Fore wing with the postmedial line angled outwards at vein 6 to near subterminal line ..... *dolli.*
  b. Fore wing with the postmedial line excurved from below costa to vein 4 ..... *expallida.*

4631. Plagiomimicus pitychroma.

Plagiomimicus pitychromus, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 182 (1873); Smith, Cat. Noct. N. Am. p. 263.
Schinia media, Morr. Proc. Bost. Soc. N. H. xviii. p. 123 (1875).

♂. Head and thorax red-brown mixed with greyish; abdomen

Fig. 102.—*Plagiomimicus pitychroma*, ♂. ½.

greyish suffused with brown. Fore wing greyish suffused with red-brown; antemedial line white with fine brown line on outer edge, slightly excurved; orbicular dark brown defined by white, very oblique, bar-shaped, its outer edge somewhat excised; reniform a dark brown bar defined by white, its upper extremity somewhat

bent outwards and its lower extremity slightly inwards; postmedial line white with fine brown line on inner edge, oblique from costa to vein 6, then inwardly oblique and slightly sinuous, a triangular dark brown patch beyond it on costal area, a pale shade defining the outer side of the patch and postmedial line; a fine brown terminal line; cilia with a slight pale line at base. Hind wing greyish suffused with brown; a fine dark terminal line and pale line at base of cilia; the underside whitish, the costal and terminal areas irrorated with brown, an indistinct diffused curved postmedial line.

Hab. U.S.A., New York, Middle, Southern, and Central States, Alabama, 1 ♂ type, Nebraska, Texas, Colorado. *Exp.* 30 millim.

4632. Plagiomimicus triplagiata. (Plate CXLII. fig. 19.)

Plagiomimicus triplagiatus, Smith, Ent. Am. vi. p. 139 (1890); id. Cat. Noct. N. Am. p. 263.

♂. Head and thorax whitish mixed with red-brown; palpi and frons darker; abdomen white tinged with brown. Fore wing grey-white irrorated and suffused with reddish-brown, the area beyond the postmedial line whiter; antemedial line indistinct, whitish, slightly curved; an oblique triangular black-brown mark defined by white in end of cell between the positions of the obsolete orbicular and reniform stigmata, with a slight brown shade above it from costa; postmedial line white slightly defined on each side by brown, oblique from costa to vein 6, obliquely excurved to vein 3, then oblique, a triangular dark brown patch beyond it on costa; subterminal line very faint, whitish with an oblique wedge-shaped black-brown patch before it between veins 4 and 1; a fine terminal dark line; cilia with a slight whitish line at base. Hind wing white faintly tinged with brown especially on terminal area; a slight brown terminal line from apex to vein 2; cilia tinged with brown at tips from apex to vein 2; the underside with the costal and terminal areas slightly irrorated with brown.

Hab. U.S.A., Colorado, 1 ♂, New Mexico, Las Vigas (*Oslar*), 1 ♂, Arizona, Tucson (*Oslar*), 1 ♂. *Exp.* 28 millim.

4633. Plagiomimicus laverna.

Thalpochares laverna, Druce, Biol. Centr.-Am., Het. ii. p. 496, pl. 95. f. 22 (1898).

♂. Head and thorax red-brown mixed with some white scales; palpi, pectus, and legs yellow-brown, the tarsi ringed with white; abdomen grey-brown with some rufous at base, the anal tuft whitish. Fore wing dark reddish brown tinged with fuscous and irrorated with white, the terminal area ochreous brown; antemedial line fine, white, slightly angled outwards below costa and very strongly in submedian fold to near postmedial line; orbicular and reniform defined by fine white lines, long and very oblique, the former somewhat constricted at middle, the latter with its lower extremity

produced; postmedial line fine, white, obliquely incurved from costa to vein 6 where it is angled outwards, then very oblique and slightly excurved to submedian fold, then more erect, a black patch irrorated with white beyond it on costa on inner side of the subterminal line, which is represented by some white scales defining the outer edge of dark area, slightly incurved below vein 3; a fine waved brown terminal line; cilia pale rufous with fine white lines at base and middle. Hind wing dark red-brown, the cilia pale red-brown with ochreous line at base and white scales at tips; the underside ochreous yellow thickly irrorated with brown, an indistinct postmedial line excurved to vein 5, then oblique.

Hab. Mexico, Durango (*Becker*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 26 millim.

4634. Plagiomimicus dolli. (Plate CXLII. fig. 20.)

Plagiomimicus dollii, Smith, Ann. N.Y. Ac. Sci. xviii. p. 118 (1908).

♀. Head, thorax, and abdomen ochreous yellow mixed with olive-brown; palpi darker at sides. Fore wing dull golden yellow suffused in parts with olive-brown especially on medial area, the veins streaked with dark brown, the costal and inner areas irrorated with blue-white; subbasal line absent; antemedial line olive-brown, oblique from costa to submedian fold where it is acutely angled outwards, then incurved; orbicular and reniform defined by olive-brown, the former large, round, the latter indistinctly defined on outer side and somewhat constricted at middle; medial line arising from vein 4 well beyond the cell, very oblique, incurved below submedian fold; postmedial line olive-brown, oblique from costa to vein 6 where it is angled outwards, then very obliquely excurved, a triangular olive-brown patch irrorated with whitish beyond it on costa: subterminal line slight, arising from the apex of the triangular patch, excurved to vein 3, then incurved; a fine olive-brown terminal line; cilia olive-brown at tips. Hind wing pale yellow with a golden gloss, slightly irrorated with brown and the veins streaked with brown; an oblique discoidal striga, curved postmedial line and fine terminal line; the underside with the costal and terminal areas irrorated with brown, a curved postmedial line, waved towards costa.

Hab. U.S.A., Arizona, Cochise Co., Palmerley, 1 ♀ co-type. *Exp.* 34–40 millim.

4635. Plagiomimicus expallida. (Plate CXLII. fig. 21.)

Plagiomimicus expallidus, Grote, Papilio, ii. p. 185 (1882); Smith, Cat. Noct. N. Am. p. 264.

Head white, the palpi, frons, and antennæ brownish; thorax white mixed with olive-brown; abdomen white tinged with brown. Fore wing ochreous white irrorated with olive-brown, with paler patches on costal area beyond the antemedial and before the post-

medial line and some whitish beyond the postmedial line from vein 3 to inner margin; antemedial line very indistinct, double, slightly excurved from costa to median nervure, then oblique; a blackish point in middle of cell and some blackish scales on discocellulars; a diffused olive-brown medial shade; postmedial line indistinct, brownish, oblique from costa to vein 7, excurved to vein 4, then oblique, a dark shade beyond it on costal area; subterminal line faint, whitish slightly defined by brown on inner side, excurved at middle; a fine brown terminal line; cilia brown mixed with ochreous white and with ochreous line at base. Hind wing white, the terminal area tinged with ochreous brown; a faint brown terminal line from apex to vein 2; the underside with the costal and terminal areas slightly irrorated with brown.

Hab. U.S.A., Montana, Colorado, Durango (*Oslar*), 3 ♂, 1 ♀, Denver (*Oslar*), 2 ♂, 3 ♀, Platte Cañon. *Exp.* 26–34 millim.

Genus **NOCLOA**.

	Type.
Nocloa, Smith, J. N.Y. Ent. Soc. xiv. p. 13 (1906)	*plagiata.*

Proboscis aborted, small; palpi upturned, very short and slight, the 2nd joint moderately fringed with scales, the 3rd short; frons with large round corneous prominence with raised edges and truncate process in middle; eyes large, round; antennæ of male almost simple; thorax clothed chiefly with scales, the prothorax without crest, the metathorax with spreading crest, the patagia slightly curled upwards at extremities; tibiæ moderately fringed with hair, the fore tarsi very short and the ungues very large; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate, the tornus with slight scale-tooth; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing bright yellow.
  a. Fore wing with small orange spots in cell before middle and at upper extremity ..... *aliaga.*
  b. Fore wing without orange spots in cell.
    a^1. Fore wing with the orbicular and reniform defined by rufous.
      a^2. Fore wing with the postmedial line bent outwards below costa to near subterminal line..... *alcandra.*
      b^2. Fore wing with the postmedial line excurved from below costa to vein 4 ..... *cordova.*
    b^1. Fore wing with the orbicular and reniform only defined by an irregular grey-brown patch before and below them. *nanata.*
B. Fore wing rufous with blackish patches on inner margin before middle and on costa before apex ..... *plagiata.*
C. Fore wing dull ochreous with olive markings..... *rivulosa.*
D. Fore wing whitish.
  a. Fore wing with olive medial band, the orbicular and reniform absent..... *nesæa.*
  b. Fore wing with the outer half of medial area suffused with red-brown, the small orbicular and reniform placed on it defined by black and close together ..... *arivaca.*

4636. Nocloa aliaga. (Plate CXLII. fig. 22.)

Stiria aliaga, Barnes, Can. Ent. xxxvii. p. 213 (1905).

Head and thorax pale yellow; palpi with slight brown streak above; pectus and legs tinged with rufous; abdomen yellow tinged with rufous. Fore wing pale yellow, a small orange antemedial spot in cell and another in upper extremity; traces of a very oblique sinuous postmedial orange line from vein 7 to inner margin; a fine rufous terminal line; cilia rufous mixed with yellow. Hind wing yellowish white with slight brown terminal line. Underside of fore wing with the costal half tinged with rufous.

Hab. U.S.A., New Mexico, Sapello Cañon (*Oslar*), 1 ♂, 1 ♀, Arizona. *Exp.* 30 millim.

4637. Nocloa alcandra.

Xanthia alcandra, Druce, P. Z. S. 1890, p. 515; id. Biol. Centr.-Am., Het. ii. p. 485, pl. 94. f. 12.

♂. Head and thorax ochreous yellow mixed with rufous; pectus and legs entirely suffused with rufous; abdomen ochreous. Fore wing golden yellow irrorated with orange-red, the costal area to

Fig. 103.—*Nocloa alcandra*, ♂. ½.

near apex, the cell and medial area to submedian fold suffused with purplish rufous, the veins slightly streaked with rufous; antemedial line brown, excurved below costa, angled inwards in cell and on vein 1 and outwards in submedian fold, orange-red towards inner margin; orbicular and reniform very large, irrorated with orange-red and defined by red-brown, the former round; postmedial line brown, slightly bent outwards below costa, obliquely incurved and slightly sinuous below vein 6; a red-brown terminal line. Hind wing yellowish white.

Hab. Mexico, Guerrero, Tierra Colorada (*H. H. Smith*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 30 millim.

*4638. Nocloa cordova. (Plate CXLII. fig. 23.)

Xanthia cordova, Barnes, Can. Ent. xxxix. p. 65 (1907).

Head and thorax yellow mixed with red-brown; abdomen paler. Fore wing yellow tinged in parts with purplish brown; antemedial

line oblique, waved; orbicular and reniform yellow defined by purplish-brown suffusion in and beyond end of cell, the former elongate elliptical, the latter broad; postmedial line bent outwards below costa, then minutely dentate, oblique below vein 4; subterminal line represented by a series of slight brown marks in the interspaces; some slight brown spots on costa towards apex; a fine dark terminal line. Hind wing semihyaline yellowish white slightly darker towards termen; a fine brown terminal line; the underside with the costal area irrorated with brown, a dark postmedial band.

Hab. U.S.A., Arizona, Chiricahua Mts. *Exp.* 26 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

4639. **Nocloa nanata.** (Plate CXLII. fig. 24.)

Stiria nanata, Neum. Papilio, iv. p. 95 (1884); Smith, Cat. Noct. N. Am. p. 262.

Metoponia macula, Smith, Trans. Am. Ent. Soc. xviii. p. 132 (1891); id. Cat. Noct. N. Am. p. 316.

♀. Head and thorax fulvous yellow; abdomen greyish suffused with brown, the anal tuft yellow. Fore wing orange-yellow; an antemedial purplish-grey spot in cell connected by a streak on median nervure with a curved purplish-grey patch below and beyond end of cell, expanding at middle to submedian fold and with minutely waved outer edge and a small purplish-grey spot above its extremity at veins 6, 7; antemedial obliquely placed red-brown points in submedian fold and on vein 1; a faint brownish bar from costa towards apex and a subterminal series of red-brown points in the interspaces from vein 7 to inner margin; cilia with series of rufous marks at tips. Hind wing greyish suffused with purplish brown leaving the termen narrowly and cilia pale yellow. Underside of fore wing fuscous brown with the costa yellowish; hind wing pale yellow, the inner and apical areas tinged with brown, a rather diffused curved postmedial line.

Hab. U.S.A., New Mexico, 1 ♀. *Exp.* 28 millim.

4640. **Nocloa plagiata.** (Plate CXLII. fig. 25.)

Nocloa plagiata, Smith, J. N.Y. Ent. Soc. xiv. p. 13 (1906).

Head and thorax rufous; antennæ with the basal joint whitish; metathoracic crest tipped with dark brown; pectus and legs yellowish behind; abdomen pale ochreous tinged with rufous at base. Fore wing rufous; a patch of black suffusion on inner margin before the antemedial line, which is red-brown defined by yellowish white on inner side, incurved in cell and strongly excurved below submedian fold; claviform represented by a patch of blackish suffusion; orbicular with faint pale annulus on inner and upper sides, round; reniform with faint pale annulus slightly defined by

brown, the inner side of centre slightly defined by brown ; a diffused oblique medial shade from costa to median nervure and faint incurved waved line from cell to inner margin ; subterminal line whitish, defined on inner side by a deep red-brown wedge-shaped patch from costa to above vein 6, with some pale points on costa and a small dentate mark below vein 6, excurved below vein 7 and at middle ; a fine red-brown line just before termen defined by whitish on inner side ; brown striæ on termen and base of cilia above tornus and a fine red-brown terminal line. Hind wing whitish tinged with red-brown especially on inner side of the fine white subterminal line, the veins brownish ; cilia with a slight red-brown line near base ; the underside yellowish white with the costal area tinged with rufous.

Hab. U.S.A., Arizona, Minnehaha, 1 ♂, Prescott (*Kunzé*), 1 ♀. *Exp.* 34 millim.

*4641. Nocloa rivulosa.

Nocloa rivulosa, Smith, J. N.Y. Ent. Soc. xiv. p. 14 (1906).

Head and thorax reddish-ochreous ; abdomen whitish. Fore wing dull ochreous with darker markings tinged with olive ; subbasal line traceable ; antemedial line double, very strongly dentate to near base ; orbicular moderate, indistinctly defined ; reniform hardly traceable ; medial shade strong and diffused, angled outwards on median nervure ; postmedial line double, fine and distinct, bent outwards below costa, excurved to vein 4, then incurved ; subterminal line pale defined on inner side by a dark shade, sinuous, followed by alternating pale and dark lines on terminal area. Hind wing dull whitish, the terminal area darker ; a postmedial line and pale terminal line ; the underside with dark discoidal spot and postmedial line.

Hab. U.S.A., California, Sta Barbara, Arizona, Yuma Co., Phœnix. *Exp.* 25–29 millim. This species is unknown to me.

4642. Nocloa nesæa. (Plate CXLII. fig. 26.)

Omia nesæa, Smith, Ins. Life, v. p. 332 (1893) ; Dyar, Cat. Lep. N. Am. p. 193.

♀. Head, thorax, and abdomen white, the vertex of thorax tinged with ochreous ; palpi brown above ; fore femora brown above, the tarsi brownish ringed with white. Fore wing creamy white with diffused olive medial band, oblique to middle of cell, then inwardly oblique ; terminal area tinged with olive ; cilia with a faint olive line near base. Hind wing white with a faint olive tinge on terminal area. Underside of fore wing with the disk suffused with pale olive.

Hab. U.S.A., W. Utah, California, Argus Mts., Arizona, Yuma Co., 1 ♀. *Exp.* 30 millim.

*4643. Nocloa arivaca. (Plate CXLII. fig. 27.)

Lythrodes arivaca, Barnes, Can. Ent. xxxix. p. 66 (1907).

♀. Head and thorax creamy white; abdomen yellowish white tinged with brown. Fore wing creamy white with a yellowish tinge, the outer half of medial area tinged with red-brown, the veins streaked with brown: antemedial line ochreous, downcurved to vein 1 near base; orbicular and reniform small, defined by blackish, the former round, the latter with black centre; medial line dark, expanding into a patch on costa, then incurved; post-medial line brown, slightly bent outwards below costa, excurved to vein 5, then strongly incurved; traces of a subterminal line excurved below vein 7; cilia white intersected with ochreous. Hind wing yellowish white tinged with brown towards termen; cilia white.

Hab. U.S.A., S. New Mexico. *Exp.* 36 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

Genus OSLARIA.

Type.

Oslaria, Dyar, J. N.Y. Ent. Soc. xii. p. 41 (1904) ..... *viridifera.*

Proboscis aborted, rather small; palpi upturned, the 2nd joint reaching to about middle of frons and moderately fringed with hair in front, the 3rd short; frons with large heart-shaped corneous prominence with raised edges, its lower edge produced to a point and with corneous plate below it; eyes large, round; antennæ of male laminate and almost simple; thorax clothed with rough scales and hair mixed, the prothorax without crest, the metathorax with spreading crest, the patagia rather curled upwards at extremities; tibiæ moderately fringed with hair, the fore tarsi typically short and the ungues very large; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Fore tarsi with the joints very short and the ungues large.

A. Fore wing with slight olive-green streaks on terminal area above and below vein 4 ..... *viridescens.*
B. Fore wing without olive-green streaks on terminal area above and below vein 4 ..... *viridifera.*

4644. Oslaria viridescens. (Plate CXLII. fig. 28.)

Stibadium viridescens, Schaus, Trans. Am. Ent. Soc. xxx. p. 153 (1904).

Head, thorax, and abdomen ochreous mixed with olive-green. Fore wing ochreous suffused with olive-green, the basal and medial areas faintly tinged with purple and the medial area suffused with red-brown from median nervure and vein 2 to above vein 1; subbasal line absent; antemedial line red-brown expanding into a triangular rufous shade at costa and defined by whitish on inner side, oblique, sinuous; orbicular and reniform large with faint pale annuli slightly defined by brown, the former rather oblique elliptical,

open above and below, the latter open above and expanding below, a chocolate-brown patch between their upper parts with a rufous shade above it on costa ; postmedial line red-brown defined on outer side by ochreous white, bent outwards below costa, oblique to vein 4, then very obliquely incurved, with a slight olive streak from it to termen above vein 4 and slight streak below extremity of vein 4, an olive shade beyond it from vein 2 to inner margin and some whitish points on costa; subterminal line oblique, whitish defined on inner side by an olive shade from costa to vein 5, then obsolete; a fine olive terminal line ; cilia whitish at base, pale olive at tips. Hind wing ochreous white faintly tinged with red-brown ; a whitish subterminal line excurved at middle ; cilia whitish at base, pale olive at tips ; the underside whitish, the costal area tinged with ochreous, a faint curved postmedial line from costa to vein 2.

Hab. Mexico, Oaxaca (*Schaus*), type † ♂ in U.S. Nat. Mus., Durango (*Becker*), 1 ♀, Godman-Salvin Coll.

4645. Oslaria viridifera.

Zotheca viridifera, Grote, Can. Ent. xiv. p. 217 (1882) ; Smith, Cat. Noct. N. Am. p. 264.

Head and thorax pale yellow mixed with olive-green ; abdomen pale yellow tinged with rufous. Fore wing yellowish white tinged with olive-green, an oblique greenish antemedial line expanding into a small spot on costa ; the medial area olive-green from submedian fold to inner margin ; orbicular and reniform hardly traceable, very faintly defined by greenish, the former round, the latter

Fig. 104.—*Oslaria viridifera*, ♂. ½.

bar-shaped, an olive-green patch from costa to between their upper parts ; postmedial line greenish, oblique from costa to below vein 5, then inwardly oblique and slightly incurved ; subterminal line represented by a diffused greenish patch on costa and slight mark on inner margin ; a fine greenish terminal line ; cilia greenish. Hind wing pale yellow faintly tinged with rufous ; a slight rufous terminal line.

Hab. U.S.A., Arizona, Huachuca Mts., 1 ♂, Catalina Mts. (*Oslar*), 1 ♂, 1 ♀. *Exp.* 34 millim.

Sect. II. Fore tarsi normal.

*4646. Oslaria rhodoxantha.

Oslaria rhodoxantha, Dognin, Ann. Soc. Ent. Belg. lii. p. 159 (1908).

♂. Head, thorax, and abdomen yellow, the head and tegulæ

suffused with rufous, the palpi browner; pectus and legs tinged with rufous. Fore wing yellow; the basal costal area and the inner side of antemedial line suffused with rufous, the terminal area purplish pink; antemedial line rufous, angled outwards below costa, very oblique to submedian fold where it is acutely angled, then very oblique to inner margin near base and emitting a streak on its inner side on vein 1; stigmata absent; a faint rufous medial

Fig. 105.—*Oslaria rhodoxantha*, ♂. ½.

line, oblique from costa to beyond the cell where it is diffused, inwardly oblique below vein 4; postmedial line double, the inner line strong, purplish pink, the outer line indistinct, excurved below costa, at middle and above inner margin and slightly angled inwards at discal and submedian folds, with traces of a curved subterminal line just beyond it; a fine purplish terminal line. Hind wing yellow, the veins and terminal area tinged with pink; an indistinct curved postmedial line, more distinct on underside.

Hab. Paraguay (*Pouillon*), type † ♂ in Coll. Dognin. *Exp.* 26 millim.

Genus **SPHIDA**.

Type.

Sphida, Grote, Bull. U.S. Geol. Geog. Surv. Terr. iv. p. 179 (1878)... *obliqua*.

Proboscis aborted, small; palpi porrect, extending to just beyond frons, the 2nd joint fringed with long hair below, the 3rd short; frons with rounded prominence hidden in a tuft of hair; eyes large, round; antennæ of male bipectinate with long branches to apex, of female with shorter branches; thorax clothed with hair only, the prothorax without crest, the metathorax with spreading crest cut off squarely behind; tibiæ fringed with long hair; abdomen with some rough hair at base, but without crests, the anal tuft of female very large and flocculent. Fore wing with the apex somewhat produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4647. Sphida obliqua.

Edema obliqua, Wlk. xxxii. 428 (1865); Smith, Cat Noct. N. Am. p. 181.
Arzama obliquata, Grote & Rob. Trans. Am. Ent. Soc. i. p. 339, pl. 6. f. 47 (1868).

Head, thorax, and abdomen pale grey slightly tinged with red-brown, especially on head, the metathoracic crest tipped with

red-brown. Fore wing with the basal area and costal area to beyond middle pale grey irrorated slightly with brown, the medial area suffused with red-brown shading to pale brown before the subterminal line, the terminal area pale grey irrorated with fuscous; antemedial line slight, very oblique and slightly excurved, from costa near middle to vein 1 near base; orbicular and reniform reddish ochreous with red-brown centres, the former small lanceolate, the latter a narrow very oblique bar pointed at extremities and with ochreous striga in centre; postmedial line very indistinct, brown, bent outwards below costa, then dentate, very oblique below

Fig. 106.—*Sphida obliqua*, ♂. ½.

vein 4, some whitish points beyond it on costa; subterminal line fuscous with slight dark marks at the veins, somewhat angled inwards at discal fold and excurved at middle; a black terminal line with whitish line before it; cilia pale rufous with slight fuscous line near tips. Hind wing greyish suffused with rufous; a fine brown terminal line; the underside grey, irrorated with brown, a brown discoidal spot and traces of postmedial line.

Hab. CANADA, Ontario, Orilla (*Bush*), 2 ♂, 1 ♀ type; U.S.A., 1 ♂, 1 ♀, south to Florida and west to the Mississippi, Massachusetts, New York (*Doubleday*), 1 ♀, Buffalo, 1 ♀, New Jersey, Ohio, 1 ♀, Florida, Colorado. *Exp.* 44–60 millim.

Larva. Head black, roughened. Body cylindrical, rather slender, black, roughened; spiracles on joint 12 large, directed posteriorly. Food-plant: Cat-tail (*Typha latifolia*).—H. G. D.

Genus BELLURA.

	Type.
Bellura, Wlk. xxxii. 465 (1865)	*gortynoides*.
Arzama, Wlk. xxxii. 644 (1865)	*gortynoides*.

Proboscis aborted, small; palpi obliquely porrect, extending to just beyond frons, the 2nd joint fringed with long hair below, the 3rd short; frons smooth, with tuft of hair; eyes large, round; antennæ of male bipectinate with rather long branches to apex, of female with short branches ending in a bristle; thorax clothed with hair only, the prothorax without crest, the metathorax with spreading crest; tibiæ fringed with long hair; abdomen with some rough hair at base, the anal tuft in female very large and flocculent. Fore wing with the apex rounded; the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell; the cell on underside clothed with long hair. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from

just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing red-brown in male, yellow suffused with rufous in female, the postmedial line excurved from costa to vein 4; anal tuft of female white ..... *gortynoides.*
B. Fore wing of female ochreous slightly irrorated with red-brown, the postmedial line strongly bent outwards below costa, anal tuft black ..... *melanopyga.*
C. Fore wing ochreous strongly irrorated and in parts suffused with dark red-brown, the postmedial line bent outwards below costa; anal tuft of female dark brown mixed with grey..... *diffusa.*

4648. Bellura gortynoides.

Bellura gortynoides, Wlk. xxxii. 465 (1865); Smith, Cat. Noct. N. Am. p. 181.
Arzama densa, Wlk. xxxii. 645 (1865).
Arzama vulnifica, Grote, Trans. Am. Ent. Soc. iv. p. 294 (1872).

♂. Head and thorax dark red-brown mixed with pale brown; antennæ and abdomen pale red-brown. Fore wing pale red-brown irrorated with dark brown, most thickly on medial and terminal areas, the basal and terminal areas tinged with grey; antemedial line brown, minutely waved and oblique from costa to subcostal nervure, then inwardly oblique, excurved below vein 1; orbicular and reniform red with some brown scales in centre and slightly defined by brown, oblique elliptical with the lower extremities somewhat pointed, the former very small, the latter narrow; a

Fig. 107.—*Bellura gortynoides*, ♂. ½.

diffused oblique line from lower angle of cell to inner margin; postmedial line brown, dentate, excurved to vein 4, then oblique, some pale points beyond it on costa; subterminal line brown, minutely waved, excurved below vein 7 and at middle and bent outwards to tornus; a fine terminal brown line. Hind wing pale red-brown with slight dark irroration; the underside with the costal area suffused with dark brown, a blackish discoidal spot and diffused curved postmedial line.

♀. Yellow suffused with rufous; abdomen with the anal tuft white; fore wing with slight brown suffusion near lower angle of cell.

Hab. Canada; U.S.A., south to Florida and west to the Mississippi, 2 ♀ type, Georgia, 1 ♂ type *densa*, Florida, Mellonville, 1 ♀. *Exp.* ♂ 36, ♀ 40–48 millim.

4649. Bellura melanopyga. (Plate CXLII. fig. 29.)

Arzama melanopyga, Grote, Papilio, i. p. 148 (1881); Smith, Cat. Noct. N. Am. p. 181.

♀. Head, thorax, and abdomen ochreous white, tinged with red-brown; anal tuft black-brown. Fore wing pale ochreous slightly irrorated with red-brown; subbasal line brown, waved, from costa to submedian fold; antemedial line brown, oblique from costa to subcostal nervure and angled inwards on vein 1; orbicular large, round, defined by diffused red-brown confluent with the antemedial line and reniform which is very obscurely defined; a diffused oblique waved red-brown line from lower angle of cell to inner margin; postmedial line red-brown, strongly bent outwards below costa, then oblique, dentate; subterminal line brown, rather diffused, dentate, bent outwards to tornus. Hind wing whitish suffused with purplish red; traces of a waved postmedial line, rather more distinct on underside.

Hab. U.S.A., Florida, Lake Beresford (*Comstock*), 1 ♀ type. *Exp.* 42 millim.

Larva. Comstock, Papilio, i. p. 147.

Dorsal surface dark olive-grey, ventral surface pale olive-grey; head pale reddish brown; anal somite reduced dorsally with the spiracles of the penultimate placed on its dorsal part at posterior end and much larger than the other spiracles. Food-plant: Water Lily, boring from upper side of leaf into the stem, exposing the anal extremity at intervals, sometimes passing from one leaf to another. 1.

4650. Bellura diffusa. (Plate CXLII. fig. 30.)

Arzama diffusa, Grote, Bull. U.S. Geol. Geog. Surv. Terr. iv. p. 179 (1878); Smith, Cat. N. Am. p. 181.

♂. Head, thorax, and abdomen ochreous greyish mixed with red-brown; palpi darker red-brown; tarsi dark red-brown with pale rings; abdomen with small dorsal dark spots on basal segments. Fore wing ochreous tinged with rufous and irrorated with red-brown, the medial area suffused with red-brown not extending to postmedial line except at costa and leaving a pale diffused oblique medial line from submedian fold to inner margin; a black point at base of median nervure; subbasal line brown, angled outwards in cell and ending at submedian fold; antemedial line brown, dentate and oblique from costa to median nervure, then inwardly oblique; orbicular and reniform ochreous, the former small, round, the latter a narrow oblique bar suffused with rufous at middle; postmedial line brown, bent outwards below costa, then dentate, oblique below vein 4, some whitish points beyond it on costa; subterminal line represented by a series of small rather diffused dentate dark marks on its outer edge, somewhat angled inwards at discal and submedian folds, excurved at middle and bent outwards

to tornus; a terminal series of narrow blackish lunules; cilia chequered pale rufous and blackish. Hind wing greyish, suffused with red-brown, the terminal area irrorated with brown; a terminal series of brown striæ; cilia white at tips; the underside whitish tinged with rufous and irrorated with brown, a red-brown discoidal spot and diffused oblique postmedial line.

♀. Abdomen with the anal tuft dark brown mixed with grey.

Hab. Canada, Quebec, Hamilton (*Moffat*), 1 ♂, 1 ♀ type; U.S.A., Maine. *Exp.* ♂ 48, ♀ 52 millim.

Genus **PHALERODES**, nov.

Type, *P. cauta.*

Proboscis aborted, not functional; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed, the prothorax with divided crest, the metathorax with slight crest; tibiæ smoothly scaled; abdomen with large dorsal crest at base only. Fore wing with the apex rounded; the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4651. **Phalerodes cauta.**

Charidea cauta, Hmpsn. Ann. S. Afr. Mus. ii. p. 293 (1902).

♂. Head fuscous brown and ochreous; thorax ochreous, the tegulæ with rufous mixed, the pro- and metathoracic crests with black mixed; fore legs brown, the tarsi with slight pale rings; abdomen ochreous, the basal crest blackish. Fore wing ochreous, the costa rufous with some grey suffusion below it from before middle to apex, a wedge-shaped chocolate-red patch from lower angle of cell to termen below apex with white streaks below it above and

Fig. 108.—*Phalerodes cauta*, ♂. ½.

below vein 4 from beyond angle of cell to termen, the terminal area below it bluish white shading to fuscous at termen, the veins and interspaces of terminal area with slight dark streaks, the inner margin tinged with brown except at base; the lines absent; orbicular defined by a few black scales, very small and rather elongate; reniform with narrow centre defined by a few black scales and small white annulus round lower part; cilia black intersected by slight white streaks and with prominent white

streak at vein 4. Hind wing yellowish white, the apex faintly tinged with brown; the underside with the costal area tinged with rufous.

♀. Hind wing wholly tinged with rufous.

Hab. Mashonaland, Salisbury (*Marshall, Dobbie*), 3 ♂, 1 ♀ type: Transvaal, White R. (*Cooke*), 1 ♀, Piet Retief (*Crawshay*), 1 ♂; Natal, Malvern (*Marshall*), 2 ♂, Durban (*Bowker*), 2 ♂; Cape Colony, Annshaw (*Miss F. Barrett*), 1 ♀. *Exp.* 28–32 millim.

Genus **RAMESODES**, nov.

Type, *R. divisa*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, round; thorax smoothly clothed with hair and scales, the prothorax with slight spreading crest; tibiæ smoothly scaled; abdomen without crests. Fore wing broad, the apex rounded, the termen obliquely curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with rather long branches, the apex serrate, of female with short branches.

4652. Ramesodes divisa.

Charidea divisa, Hmpsn. Ann. S. Afr. Mus. ii. p. 292 (1902).

♂. Head and thorax black-brown; antennæ and base of tegulæ reddish brown; abdomen ochreous white at base, fuscous brown at extremity. Fore wing black-brown slightly irrorated with white scales, a broad ochreous fascia tinged with rufous above below costa from base through the cell to termen above vein 5, defined below by a slight black streak above median nervure and vein 4 with fine white streak above it, the veins on the ochreous area

Fig. 109.—*Ramesodes divisa*, ♂. ½.

brownish, a fine whitish streak below vein 6, the inner margin and the submedian interspace on terminal half rufous; the lines absent; the lower part of reniform defined by white interrupting the black fascia; the interspaces of terminal area with fine black streaks, longer towards costa. Hind wing whitish slightly tinged with brown, the terminal area suffused with brown from apex to vein 2;

cilia whitish and fuscous, mostly white towards tornus; the underside yellowish white, the costal area suffused and irrorated with rufous.

♀. Hind wing suffused with fuscous except at base.

Hab. Transvaal, White R. (*Cooke*), 1 ♀; Natal, Maritzburg (*Burnup*), 1 ♂, Victoria Distr. (*Gooch*), 2 ♀ type; Pondoland, Nggeleni (*Swinny*), 1 ♂; Cape Colony, Transkei (*Miss F. Barrett*), 2 ♀. *Exp.* 34–36 millim.

Sect. II. Antennæ of male ciliated.

4653. Ramesodes micropis, n. sp.

♂. Head and thorax fuscous mixed with greyish; patagia ochreous irrorated with brown; pectus whitish; legs fuscous, the tarsi ringed with white; abdomen ochreous white tinged with rufous. Fore wing ochreous tinged with rufous, the veins slightly streaked with brown, the terminal area fuscous suffused with blue-grey, emitting a fascia below median nervure to near base; a black streak in basal half of submedian fold slight defined below by rufous towards extremity; a chocolate-red fascia in lower part of cell between orbicular and reniform and from the latter half way to termen; a white streak on vein 5 defined on each side by fine

Fig. 110.—*Ramesodes micropis*, ♂. ½.

black streaks with an ochreous streak above it and below it towards termen; the lines absent; orbicular very minute, whitish defined by brown and with brown centre; reniform a very small whitish lunule, its centre slightly defined by brown and its upper part ill-defined; the interspaces of terminal area with slight black streaks, the submedian interspace with two black streaks with slight ochreous streak between them; cilia blackish slightly intersected with white and with distinct white streak at vein 5. Hind wing white, the costal and terminal areas slightly suffused with brown; cilia white, brownish at base, wholly brown at apex; the underside with the costal area suffused with ochreous, the terminal area slightly irrorated with fuscous from apex to vein 2.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type. *Exp.* 30 millim.

Genus **LOPHOCALAMA**, nov.

Type, *L. neuritis*.

Proboscis fully developed; palpi obliquely upturned, reaching to about vertex of head and fringed with rather long hair above; frons smooth; eyes large, round; antennæ of male somewhat laminate and minutely ciliated; thorax clothed with rough hair and hair-like scales, the prothorax with sharp triangular crest, the metathorax with double ridge-like crest; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4654. **Lophocalama neuritis**, n. sp.

♂. Head and thorax ochreous irrorated with black; abdomen ochreous white slightly irrorated with black. Fore wing ochreous thickly irrorated with black, the veins with pale streaks; diffused fuscous streaks along subcostal and median nervures and fine streaks defining the veins beyond the cell, leaving a pale fascia in discal fold from before end of cell to termen; a terminal series

Fig. 111.—*Lophocalama neuritis*, ♂. ½.

of black points; cilia fuscous mixed with ochreous. Hind wing ochreous white suffused and irrorated with fuscous especially on terminal half; a terminal series of black points between veins 7 and 2; cilia ochreous white. Underside of fore wing suffused with fuscous except marginal areas; hind wing ochreous white, the terminal half slightly irrorated with black.

Hab. N. S. Wales, Sydney (*Mathew*), 1 ♂ type. *Exp.* 40 millim.

Genus **PHRAGMATIPHILA**, nov.

Type.

Nonagria, Hübn. Verz. p. 241 (1827), nec Treit, 1825 ..... *typhæ*.

Type, *P. nexa*.

Proboscis aborted, minute; palpi porrect, hardly extending beyond the frons and fringed with long hair below; frons with transverse corneous plate at middle, square in front and concealed by hair; eyes large, round; thorax clothed with hair only, the pro- and metathorax with slight spreading crests; tibiæ fringed with long hair; abdomen with some rough hair at base and dorsal crest at base only. Fore wing with the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 9 from 10 anastomosing with 8 to form a rather long areole, 6 from the areole or cell; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 on a long stalk; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with rather long branches to apex.

4655. Phragmatiphila truncata.

Leucania truncata, Wlk. ix. 111 (1856).
Leucania leonina, Wlk. xxxii. 627 (1865).
Nonagria exitiosa, Oliff. Agric. Gaz. N.S.W. iv. p. 380, pl. 22. f. E (1893).

Head and thorax greyish ochreous mixed with fuscous brown; antennæ pale ochreous; abdomen ochreous white. Fore wing ochreous suffused and irrorated with reddish brown; traces of antemedial dark points on the veins; an indistinct double oblique postmedial series of slight dark points from vein 6 to inner margin;

Fig. 112.—*Phragmatiphila truncata*, ♂. ½.

a terminal series of black points. Hind wing ochreous white slightly tinged with brown; the underside pale ochreous, the costal area slightly tinged with rufous.

Ab. 1. Head, thorax, and fore wing entirely suffused with fuscous. ♀. Fore wing more ochreous without reddish tinge.

Ab. 2 (*leonina*). Fore wing with the median nervure and vein 4 streaked with fuscous.

Hab. N. S. Wales (*Raynor*), 2 ♂, 1 ♀; S. Australia, Adelaide, 3 ♀ type; Tasmania, 1 ♀ type *leonina*. *Exp.* 28–30 millim.

Larva. Pinkish, purplish above; lateral line very indistinct; ventral surface yellowish white; head red-brown; thoracic plate yellow-brown; each somite with four dorsal and two lateral warts and similar subventral warts. Food-plant: Reeds, in the stems.

Sect. II. Antennæ of male minutely serrate and fasciculate.

A. Fore wing red-brown, the reniform white, its upper extremity bent outwards and lower extremity angled inwards ..... *nexa*.
B. Fore wing greyish suffused with brown, an indistinct whitish discoidal bar ..... *serrata*.
C. Fore wing fuscous black, the reniform with white annulus..... *fumea*.

4656. Phragmatiphila nexa.

Noctua nexa, Hübn. Eur. Schmett., Noct. f. 395 (1808); Frr. Neue Schmett. ii. pl. 136. ff. 3, 4; Herr.-Schäff. Eur. Schmett., Noct. ff. 342, 343; Staud. Cat. Lep. pal. p. 187.

Head and thorax red-brown with a greyish tinge; palpi and sides of frons dark brown; tarsi dark brown with slight pale rings; abdomen pale red-brown, the basal crest blackish. Fore wing pale red-brown suffused with rufous, the terminal area rather greyer,

the veins with slight dark streaks; subbasal line represented by faint dark points at costa and median nervure, the antemedial line by slight dark marks on costa, in cell and on vein 1; orbicular represented by a minute white streak defined by dark brown; reniform white slightly defined by brown and with red-brown lunule in centre, narrow, produced at upper extremity and angled inwards on median nervure to below orbicular; postmedial line very indistinct, bent outwards below costa, then minutely dentate, excurved to vein 4, then oblique, with minute dark streaks beyond it on the veins; a dark terminal line; cilia pale rufous at base, whitish at tips. Hind wing greyish ochreous suffused with brown, the veins slightly streaked with brown; a fine brown terminal

Fig. 113.—*Phragmatiphila nexa*, ♂. ½.

line; cilia pale rufous, whitish at tips; the underside whitish suffused and irrorated with brown, a minute discoidal lunule and diffused oblique postmedial line.

Hab. France; Germany, Zeller, Frey, and Leech Colls.; ?Sweden. *Exp.* 28–34 millim.

Larva. Kirby, Butt. & Moths Eur. p. 162; Hffm. Raup. p. 103.

Dull white with dorsal and subdorsal reddish stripes; lateral line black; thoracic and anal plates yellowish. Food-plant: *Carex*, in the stems. 6.

4657. Phragmatiphila serrata, n. sp. (Plate CXLII. fig. 31.)

♂. Head and thorax fuscous brown mixed with some ochreous; palpi blackish; tarsi blackish with slight pale rings; abdomen greyish ochreous suffused with brown. Fore wing greyish ochreous suffused and irrorated with dark brown, the end of cell, area just beyond it and terminal area except at apex suffused with fuscous; traces of an oblique minutely waved dark antemedial line; an indistinct whitish discoidal bar; postmedial line indistinct, blackish, bent outwards below costa, then strongly dentate, oblique below vein 4, an ill-defined oblique pale band beyond it from apex to inner margin; subterminal line represented by an oblique series of small whitish marks with black scales before and beyond them between veins 7 and 2; a terminal series of black points; cilia with a slight reddish line at base. Hind wing ochreous suffused with brown; the underside greyer with terminal series of black points from apex to vein 2.

Hab. Uganda, Ruwenzori, 5300′ (*Scott-Elliot*), 1 ♂ type. *Exp.* 34 millim.

4658. **Phragmatiphila fumea.** (Plate CXLII. fig. 32.)

Polia fumea, Hmpsn. J. Bomb. Soc. xiv. p. 202 (1902).

♂. Head and thorax fuscous black, some of the hairs tipped with white; antennæ brownish white; tarsi slightly ringed with white; abdomen greyish fuscous. Fore wing fuscous black with a greyish gloss, the veins irrorated with white scales; a slight black streak below base of cell; orbicular and reniform small with fuscous centres irrorated with white and white annuli incompletely defined by black, the former round, the latter slightly angled inwards on median nervure, a black streak between them in discal fold and beyond the reniform to postmedial line, which is very indistinct, bent outwards below costa, then dentate, oblique below vein 4; short subterminal black streaks below veins 5 and 4; a terminal series of small black lunules with white points on the veins between them; cilia with a slight whitish line through them. Hind wing ochreous white tinged with purplish fuscous; a fine dark terminal line; cilia ochreous at base, white at tips; the underside with the costal area slightly irrorated with brown, a brown discoidal spot.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♂ type. *Exp.* 30 millim.

Sect. III. Antennæ of male ciliated.

A. Fore wing with the reniform present.
  a. Fore wing with the reniform not angled inwards on median nervure.
    *a*¹. Fore wing with the small reniform with dark centre and pale annulus open above and below ..... *leucaneura*.
    *b*¹. Fore wing with the reniform a pale lunule ..... *grisescens*.
  b. Fore wing with the reniform angled inwards on median nervure
    *a*¹. Fore wing with the orbicular a small black spot with ochreous annulus, the reniform moderately angled inwards on median nervure ..... *interrogans*.
    *b*¹. Fore wing with the orbicular represented by two black points above, the reniform angled inwards on median nervure to before origin of vein 2 ..... *typhæ*.
B. Fore wing with the reniform absent.
  a. Fore wing ochreous tinged with rufous ..... *turpis*.
  b. Fore wing with the costal half greyish ochreous, the inner half suffused and irrorated with dark brown ..... *bipartita*.

4659. **Phragmatiphila leucaneura**, n. sp. (Plate CXLIII. fig. 1.)

♂. Head and thorax dark brown, the scales tipped with grey; pectus and legs dark brown mixed with greyish, the tarsi blackish ringed with white; abdomen greyish suffused and irrorated with dark brown. Fore wing greyish ochreous strongly suffused and irrorated with dark brown, the veins of costal area with slight pale streaks; traces of a curved blackish antemedial line; orbicular and reniform very small, ochreous defined by black except above and with some black before and between them, the former rather triangular, the latter with black striga in centre; traces of an oblique

blackish medial line from lower angle of cell to inner margin; an oblique postmedial series of slight black points on the veins from vein 6 to inner margin; an oblique ochreous shade from apex; an oblique ochreous line from termen just below apex to inner margin, fine towards apex and broadening towards inner margin, defined on each side by dark brown suffusion; a terminal series of black points; cilia ochreous tipped with brown. Hind wing ochreous suffused with brown, the base and termen paler; the underside ochreous irrorated with brown, the terminal half suffused with brown, a dark discoidal spot.

Hab. Burma, Hsipaw (*de Nicéville*), 1 ♂ type. *Exp.* 26 millim.

4660. **Phragmatiphila grisescens**, n. sp (Plate CXLIII. fig. 2.)

♀. Head and thorax grey tinged with dull brown; pectus, legs, and abdomen grey suffused with fuscous. Fore wing grey tinged with brown and irrorated with fuscous, the cell and area just below it suffused with fuscous, the terminal area suffused with fuscous, narrowing to a point at apex; traces of a blackish antemedial line bent inwards to costa and excurved in cell and submedian interspace; reniform a small ochreous lunule defined by black; traces of an oblique waved blackish medial line from cell to inner margin; traces of a blackish postmedial line, oblique towards costa, then with series of black points beyond it on the veins, excurved to vein 4, then oblique; a terminal series of minute black lunules defined on inner side by slight ochreous lunules. Hind wing greyish suffused with fuscous brown; the underside brownish white irrorated with brown, a small dark discoidal spot.

Hab. Sikhim, 1800′ (*Dudgeon*), 1 ♀ type. *Exp.* 34 millim.

4661. **Phragmatiphila interrogans.** (Plate CXLIII. fig. 3.)

Leucania interrogans, Wlk. ix. 114 (1856).

Head and thorax ochreous whitish mixed with reddish brown; abdomen ochreous whitish. Fore wing pale ochreous tinged with rufous and irrorated with dark brown; a diffused brown shade from base along subcostal nervure to apex and another along median nervure and vein 5 to termen; orbicular represented by a small black spot with slight ochreous annulus; reniform an ill-defined oblique ochreous bar slightly angled inwards on median nervure and with slight dark line on it near inner edge; faint traces of a postmedial line bent outwards below costa, then minutely waved and with slight dark streaks beyond it on the veins, incurved below vein 4; traces of a pale subterminal line excurved below vein 7 and at middle; a terminal series of black points. Hind wing pale ochreous suffused with brown; the underside pale ochreous slightly irrorated with brown, the costal area tinged with rufous, a dark discoidal lunule and traces of a sinuous postmedial line.

Hab. ignotus, 1 ♂, 1 ♀ type. *Exp.* 36 millim.

4662. Phragmatiphila typhæ.

Noctua typhæ, Thnbg. Ins. Suec. i. p. 3 (1784); Esp. Schmett. iv. pl. 140. ff. 3, 5 (1789); Hübn. Eur. Schmett., Noct. f. 415; Frr. Neue Schmett. pl. 89; Dup. Lép. Fr. vii. pt i. p. 94, pl. 106. f. 8; Steph. Ill. Brit. Ent., Haust. iii. p. 71; Herr.-Schäff. Eur. Schmett., Noct. ff. 349–351; Staud. Cat. Lep. pal. p. 187.
Noctua arundinis, Fabr. Mant. Ins. ii. p. 141 (1787).
Noctua nervosa, Esp. Schmett. iv. pl. 148. f. 1 (1790).
Noctua fraterna, Treit. Eur. Schmett. x. (2) p. 99 (1835).

Head and thorax bright rufous; abdomen ochreous greyish tinged with rufous at base and slightly irrorated with brown. Fore wing bright rufous tinged with ochreous greyish in parts, the veins with pale streaks irrorated with fuscous on basal half; subbasal black points on subcostal and median nervures; antemedial line represented by double black points on the veins; orbicular represented by two black points above, the reniform by a faint narrow ochreous lunule angled inwards on median nervure to before origin of vein 2 and defined on outer side at lower angle of cell and below by blackish; a postmedial series of black points

Fig. 114.—*Phragmatiphila typhæ*, ♂. ½.

excurved from costa to vein 4, then oblique; subterminal line represented by a series of slight ochreous marks defined on inner side by wedge-shaped black marks; a terminal series of minute black lunules; cilia with dark lines near base and at tips. Hind wing yellowish white, the interspaces of terminal area suffused with fuscous brown; a terminal series of black striæ; the underside pale yellow, the costal and terminal areas irrorated with fuscous, a black discoidal spot.

Ab. 1. *fraterna*. Head, thorax, and fore wing dark reddish brown, the last with the markings indistinct.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, & Leech Colls.; Austria: Hungary; Switzerland; Spain, Catalonia; N. Italy; Sweden; Russia; ? Palestine; W. Turkestan, Issyk-kul; E. Turkestan, Ili. *Exp.* 44–58 millim.

Larva. Meyr. Brit. Lep. p. 111; Barrett, Lep. Brit. v. p. 85, pl. 195. f. 1.

Pale ochreous or pinkish ochreous; spiracular line paler; head and thoracic plate reddish brown. Food-plant: *Typha*, in the stems. 7–8. Pupa usually with head downwards.

4663. **Phragmatiphila turpis.** (Plate CXLIII. fig. 4.)

Nonagria turpis, Butl. A. M. N. H. (5) iv. p. 359 (1879).

Head and thorax pale rufous; abdomen whitish tinged with brown. Fore wing ochreous tinged with rufous, a slight brown shade below median nervure and between vein 4 and submedian fold to near termen, the interspaces of costal area tinged with brown on apical half, the terminal area tinged with brown; a slight dark mark in end of cell; a postmedial series of dark points on the veins, excurved to vein 4, then oblique; a terminal series of slight dark points. Hind wing ochreous whitish tinged with brown; the underside whitish tinged with rufous.

Ab. 1. Thorax suffused with dark brown; fore wing with the brown shade below the cell more distinct; an indistinct dark antemedial line angled outwards in the interspaces and inwards on the veins: the dark mark in end of cell prominent; postmedial line indistinct, dentate, and produced to dark points on the veins; a subterminal series of indistinct wedge-shaped dark marks, excurved below vein 7; a terminal series of small black spots; hind wing browner.

Hab. Japan, Yokohama (*Pryer*), 7 ♂, 3 ♀, Nagasaki (*Leech*), 1 ♀. *Exp.* 30–32 millim.

4664. **Phragmatiphila bipartita**, n. sp. (Plate CXLIII. fig. 5.)

♀. Head and front of thorax very dark red-brown with a greyish ochreous ring at base of tegulæ; hind part of thorax greyish ochreous; pectus and legs greyish ochreous mixed with dark brown; abdomen greyish ochreous. Fore wing with the costal half greyish ochreous with some dark brown irroration on costa; a dark brown fascia from just above median nervure and vein 4 from base to near termen, the inner area greyish ochreous irrorated with dark brown; a small subterminal black spot on vein 5 and short streak on vein 4; cilia greyish ochreous with a brown line through them. Hind wing grey-white tinged with brown; the underside with the costal and terminal areas irrorated with brown.

Hab. Transvaal, White R. (*Cooke*), 1 ♀ type. *Exp.* 36 millim.

Genus **OMPHALAGRIA**, nov.

Type, *O. hemiochra*.

Proboscis aborted, minute; palpi porrect, extending to just beyond the frons and moderately clothed with scales; frons with large rounded prominence with truncate corneous process at middle with raised edges; eyes large, round; antennæ of female almost simple; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing rather narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

*4665. Omphalagria hemiochra.

Omphalagria hemiochra, de Joan. ined.

♀. Head and thorax black mixed with some greyish ochreous especially on thorax behind; abdomen white tinged with ochreous. Fore wing with the costal half ochreous white tinged with red-brown especially at base, the apex suffused with fuscous, the inner half and terminal area to below apex black; a fine black streak defined above and below by white on terminal half of median nervure expanding into a spot before the rounded white spot at

Fig. 115.—*Omphalagria hemiochra*, ♀. ½.

lower angle of cell defined by black except above; an oblique white fascia from below apex to discal fold and thence to the discoidal spot; traces of a whitish subterminal line on the black area; a terminal series of black points. Hind wing white, the termen slightly tinged with fuscous from apex to vein 2; the underside with the costal area suffused with fuscous.

Hab. Fr. Guinea, Oudoula Siguiri, type† ♀ in Coll. Joannis. *Exp.* 28 millim.

Genus **CALAMISTIS**, nov.

Type, *C. fusca*.

Proboscis aborted, minute; palpi upturned, the 2nd joint reaching to middle of frons and fringed with long hair in front, the 3rd short; frons smooth; eyes large, round; thorax clothed with long hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ fringed with long hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate, with moderate branches to apex.

A. Fore wing with the costal area concolorous, an oblique pale subterminal line ..... *fusca.*

B. Fore wing with the costal half pale, no oblique pale subterminal line.

a. Fore wing with the orbicular and reniform well defined and with black fascia between them ..... *pallidicosta.*

b. Fore wing with the orbicular and reniform reduced to points and without black fascia between them ..... *præpallens.*

4666. Calamistis fusca.

Sesamia fusca, Hmpsn. Ann. S. Afr. Mus. ii. p. 296 (1902).

Head and thorax red-brown mixed with dark brown ; tarsi dark brown with pale rings ; abdomen ochreous tinged with red-brown. Fore wing red-brown suffused with dark brown ; traces of a curved dark antemedial line ; orbicular and reniform small, ochreous with very slight whitish annuli defined by black, the former rather oblique and produced at lower extremity ; an indistinct blackish postmedial line, oblique towards costa, then dentate and oblique below vein 4, some pale points beyond it on costa ; subterminal line represented by an oblique series of ochreous marks in the

Fig. 116.—*Calamistis fusca*, ♂. ½.

interspaces between veins 7 and 2, defined on inner side by wedge-shaped black marks, and with slight black marks beyond them to the small terminal lunules. Hind wing ochreous whitish tinged with brown ; traces of a discoidal point and diffused subterminal line ; the underside ochreous irrorated with brown, a faint discoidal lunule and diffused postmedial line.

Hab. N. Rhodesia, Katanga Distr. (*Neave*), 1 ♂ ; Transvaal (*Pead*), 1 ♂, 1 ♀, Pretoria (*Swierstra*), 1 ♀, White R. (*Cooke*), 1 ♂ ; Natal, Estcourt (*Hutchinson*), 1 ♂, Durban (*Innes*), 2 ♀ ; Basutoland, Maseru (*Crawshay*), 3 ♀ ; C. Colony, Annshaw (*Miss F. Barrett*), 4 ♂, 2 ♀ type. *Exp.* 34–42 millim.

4667. Calamistis pallidicosta. (Plate CXLIII. fig. 6.)

Baniana pallidicosta, Hmpsn. Ann. S. Afr. Mus. ii. p. 403 (1902).

♀. Head and thorax fuscous brown mixed with some ochreous especially on tegulæ ; tarsi with pale rings ; abdomen ochreous mixed with brown. Fore wing fuscous brown slightly irrorated with reddish ochreous, the costal area ochreous irrorated with rufous and fuscous, narrowing to a point just before apex, the costal edge darker ; a slight black streak below base of cell ; subbasal line represented by faint double dark striæ from costa, the antemedial line by faint double dark striæ from costa and traces of a line from cell to inner margin ; claviform a very indistinct short blackish streak ; orbicular and reniform ochreous irrorated with brown and incompletely defined by black, a black fascia

between them, the former small, round, the latter with its extremities rather produced and with slight blackish streaks above and below vein 5 from it to the very indistinct postmedial line, which is strongly bent outwards below costa, then dentate and produced to pale points on the veins, oblique below vein 4; subterminal line represented by a series of faint pale marks in the interspaces with slight blackish streaks before and beyond them; a fine whitish line at base of cilia. Hind wing uniformly suffused with brown; cilia whitish with a brown line through them; the underside yellowish white irrorated with brown, traces of a curved postmedial line.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♀ type. *Exp.* 38 millim.

668. **Calamistis præpallens**, n. sp. (Plate CXLIII. fig. 7.)

♂. Head and thorax fuscous brown tinged with grey; hind legs whitish; abdomen white slightly tinged with brown. Fore wing grey-brown, the costal half paler; a diffused pale rufous fascia in discal fold from middle of cell to subterminal line; a black streak below basal half of cell; orbicular represented by a black point above median nervure, the reniform by a small fuscous spot at lower angle of cell slightly defined by white, its upper part defined by slight black points; a rather wedge-shaped black subterminal spot in discal fold with traces of black points on the veins from it to inner margin; a terminal series of slight black striæ. Hind wing white with fine dark terminal line; the underside with the costal area and terminal area to vein 3 tinged with pale rufous.

Hab. Travancore, Pirmâd (*Mrs. Imray*), 3 ♂ type. *Exp.* 30 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing with pale subterminal line.
  a. Fore wing with the subterminal line excurved at middle and bent outwards to tornus.
    a^1. Fore wing with the subterminal line defined on inner side by dentate black marks ..... *melanodonta*.
    b^1. Fore wing with the subterminal line not defined on inner side by dentate black marks ..... *nubifera*.
  b. Fore wing with the subterminal line oblique, straight.
    a^1. Fore wing with pale streaks on the veins of terminal half ..... *obliquifascia*.
    b^1. Fore wing without pale streaks on the veins.
      a^2. Fore wing with the inner half pale to subterminal line ..... *microsticta*.
      b^2. Fore wing with the basal half of inner area concolorous ..... *submarginalis*.
B. Fore wing without pale subterminal line.
  a. Fore wing with slight black streaks in cell towards extremity and in discal fold beyond the cell ..... *stygiata*.
  b. Fore wing without black streaks in and beyond cell ... *unicolora*.

4669. **Calamistis melanodonta**, n. sp. (Plate CXLIII. fig. 8.)

♂. Head and thorax dark brown mixed with greyish and slightly tinged with red-brown; palpi black at sides; tarsi fuscous with slight pale rings; abdomen grey-white dorsally suffused with fuscous. Fore wing grey-white tinged with rufous and irrorated with fuscous, an oblique fuscous shade from medial part of costa to subterminal line below vein 3; subbasal line blackish, waved, from costa to submedian fold in base of which there is a diffused black streak; antemedial line black, minutely waved, oblique from costa to vein 1 where it almost touches the postmedial line, then bent inwards; claviform absent; orbicular small, round, obscured by the fuscous shade and slightly defined by black; reniform small, rufous slightly defined by blackish; postmedial line blackish, rather diffused, slightly bent outwards round the reniform, oblique below the cell and slightly angled outwards on vein 1, some slight pale points beyond it on costa; subterminal line defined by an oblique dark shade on inner side from costa and a strong blackish shade between veins 6 and 1 with dentate black marks in the interspaces, incurved below vein 4; a terminal series of small black spots. Hind wing nearly pure white, the veins slightly tinged with brown; the underside with the costa irrorated with black, a large black discoidal spot, postmedial series of short streaks on the veins, and terminal series of points.

Hab. Uganda, Entebbe (*Minchin*), 1 ♂ type. *Exp.* 26 millim.

4670. **Calamistis nubifera**, n. sp. (Plate CXLIII. fig. 9.)

♂. Head, thorax, and abdomen red-brown suffused with dark brown; palpi dark brown; tarsi blackish ringed with ochreous. Fore wing ochreous tinged with rufous; the costal half of medial area, the postmedial costal area, and the medial part of terminal area suffused with dark brown; subbasal line black, waved, from costa to submedian fold, in which there is a short black streak from base; antemedial line waved, somewhat oblique from costa to submedian fold; orbicular and reniform faintly defined by blackish, the former oblique elliptical, the latter with slight curved line in centre; postmedial line blackish, oblique towards costa, then dentate and oblique below vein 5; some slight pale points beyond it on costa; subterminal line ochreous defined on inner side by brown suffusion, arising below vein 7 and bent outwards to tornus; a terminal series of small blackish lunules; cilia dark brown with whitish line at base and intersected with whitish. Hind wing white; a blackish discoidal spot and terminal series of black striæ; the underside with the costal area slightly irrorated with brown, a prominent black discoidal lunule, indistinct diffused minutely waved postmedial line, and terminal series of small lunules.

Hab. Congo Forest (*Wollaston*), 1 ♂ type. *Exp.* 28 millim.

4671. Calamistis obliquifascia.

Sesamia obliquifascia, Hmpsn. Trans. Zool. Soc. xix. p. 108, pl. iv. f. 15 (1909).

♂. Head, thorax, and abdomen ochreous white mixed with fuscous; palpi with the 2nd joint fuscous at sides. Fore wing ochreous white irrorated with black, the veins streaked with whitish; a rather diffused black streak below base of cell; a faint whitish discoidal lunule; an oblique whitish band from apex to inner margin beyond middle, defined on outer side by slight blackish marks; a terminal series of small black lunules; cilia whitish at base, mixed with black at tips. Hind wing whitish slightly tinged with brown; a terminal series of slight dark striæ from apex to vein 2; the underside whitish slightly irrorated with brown.

Hab. Uganda, Ruwenzori, 3500′ (*Wollaston*), 1 ♂ type; Transvaal, White R. (*Cooke*), 1 ♂. *Exp.* 24 millim.

*4672. Calamistis microsticta. (Plate CXLIII. fig. 10.)

Polia microsticta, Hmpsn. Moths Ind. ii. p. 233 (1894).

♂. Head and thorax ochreous mixed with dark brown; sides of palpi and frons dark brown; antennæ ochreous white; legs dark brown mixed with grey; the tarsi with pale rings; abdomen ochreous suffused with red-brown. Fore wing ochreous, the cell and costal area to near apex tinged with purplish pink and irrorated with dark brown; subbasal line represented by slight dark striæ from costa and cell; antemedial line indistinct, double, angled outwards below costa, then oblique to submedian fold, then angled inwards on vein 1 to inner margin; claviform absent; orbicular and reniform very small, defined by black, the former ochreous, oblique V-shaped, open above, the latter with dark centre and ochreous annulus, a blackish streak between them in cell; postmedial line rather indistinct, with black point on costa, bent outwards below costa, then dentate and produced to black points on the veins, oblique below vein 4; subterminal line obsolete on costal area, oblique from vein 6 to inner margin, ochreous defined by reddish brown on inner side and with dark brown, rufous, and grey irroration beyond it; a terminal series of small black lunules; cilia fulvous yellow at base, chequered ochreous and black at tips. Hind wing ochreous uniformly suffused with fuscous brown; a slight dark terminal line; cilia ochreous; the underside ochreous irrorated with fuscous, a dark discoidal lunule, indistinct sinuous postmedial line with minute dark streaks on the veins, and traces of diffused subterminal line.

Hab. Sikhim (*Möller*), 1 ♂ type. *Exp.* 36 millim.

4673. Calamistis submarginalis.

Ichthyura submarginalis. Hmpsn. Ill. Het. B. M. viii. p. 60, pl. 141. f. 5 (1891); d. Moths Ind. ii. p. 285.

♀. Head and thorax whitish mixed with red-brown; palpi dark brown; abdomen grey-brown. Fore wing ochreous whitish suffused and irrorated with red-brown, the basal costal area, medial area obliquely from costa to submedian fold, and terminal area except at apex suffused with dark brown; traces of a blackish subbasal line from costal to submedian fold, and of an antemedial line oblique from costa to submedian fold: orbicular and reniform very small and incompletely defined by black, the former oblique and somewhat produced at lower extremity; postmedial line indistinct, slightly bent outwards below costa, then dentate, oblique below

Fig. 117.—*Calamistis submarginalis*, ♀. ½.

vein 4, some slight pale points beyond it on costa; subterminal line oblique, ochreous white defined on inner side by dark brown, arising below vein 7; a terminal series of small black lunules; cilia chequered ochreous and dark brown and with brown line at middle. Hind wing greyish strongly suffused with brown; cilia ochreous white with a brown line through them; the underside ochreous thickly irrorated with brown, a slight discoidal lunule and indistinct diffused curved postmedial line.

Hab. Madras, Nilgiris (*Hampson*), 1 ♀ type. *Exp.* 32 millim.

4674. Calamistis stygiata, n. sp. (Plate CXLIII. fig. 11.)

♂. Head and thorax fuscous, the hairs slightly tipped with white; antennæ ringed with white; tarsi blackish ringed with white; abdomen white tinged with fuscous. Fore wing fuscous brown with a greyish tinge; a slight black streak below base of cell connected with the claviform, which is very narrow and elongate, defined by black; a slight black streak above median nervure from middle of cell to the reniform, which is defined by four black points and with black streak beyond it in discal fold to near termen on a faint whitish fascia and with slight black streak above its extremity on a whitish streak. Hind wing white, the veins and terminal area slightly tinged with brown; the underside irrorated with brown especially on costal and terminal areas.

Hab. Transvaal, Piet Retief (*Crawshay*), 1 ♂ type. *Exp.* 30 millim.

4675. **Calamistis unicolora**, n. sp. (Plate CXLIII. fig. 12.)

♂. Head and thorax pale brown mixed with whitish; tarsi slightly ringed with white; abdomen whitish tinged with brown. Fore wing uniform grey-brown mixed with whitish and faintly tinged with rufous; an antemedial blackish point in submedian fold; a slight fuscous point at lower angle of cell faintly defined by whitish; traces of a postmedial series of dark points on the veins; a terminal series of slight dark striæ. Hind wing fuscous brown tinged with grey; cilia white mixed with brown; the underside whitish suffused and irrorated with reddish brown, a blackish discoidal spot.

Hab. Upper Congo (*Wollaston*), 1 ♂ type. *Exp.* 28 millim.

Genus **RABILA**.

Type.
Rabila, Wlk. xxxii. 507 (1865) ..... *frontalis*.

Proboscis absent; palpi porrect, slender, extending about the length of head; frons with rounded corneous prominence with raised edges and corneous plate below it; eyes large, round; antennæ of male bipectinate with moderate branches, the apex serrate; thorax clothed with hair and scales mixed, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell to near middle.

4676. Rabila frontalis.

Rabila frontalis, Wlk. xxxii. 508 (1865); Moore, Lep. Ceyl. ii. p. 135, pl. 132. f. 5; Hmpsn. Moths Ind. ii. p. 170.

♂. Head and thorax ochreous mixed with rufous; abdomen ochreous slightly tinged with rufous. Fore wing ochreous slightly tinged with rufous, the veins, discal and submedian folds streaked with rufous; a slight rufous discoidal lunule; subterminal line

Fig. 118.—*Rabila frontalis*, ♂. ½.

rufous, strongly incurved at veins 5 and 2; a rufous terminal line. Hind wing semihyaline white, the veins and termen tinged with rufous.

Hab. Ceylon (*Templeton*), 1 ♂ type faded and discoloured. *Exp.* 36 millim.

Genus CEA.

Cea, Grote, Papilio, iii. p. 78 (1883) ..... Type. *immacula.*

Proboscis fully developed; palpi porrect, extending to just beyond frons, the 2nd joint moderately fringed with hair below; frons with rounded prominence bare of scales and with corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base, but without crests. Fore wing with the apex somewhat produced and acute; the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with pale streaks on the veins and dark streaks in the interspaces of terminal area.
  a. Fore wing with black points in and beyond lower angle of cell; hind wing suffused with brown ..... *cirphidia.*
  b. Fore wing without black points in and beyond lower angle of cell; hind wing ochreous white ..... *leucanidia.*
B. Fore wing nearly uniform pale yellow ..... *immacula.*

4677. Cea cirphidia, n. sp. (Plate CXLIII. fig. 13.)

♀. Head and thorax pale rufous; pectus and legs whitish tinged with rufous; abdomen ochreous white tinged with brown and slightly irrorated with black. Fore wing pale rufous sparsely irrorated with black, the veins with slight pale streaks; a black point in lower angle of cell and two just beyond the angle and one beyond upper angle. Hind wing ochreous white suffused with reddish brown especially on terminal area, the veins of terminal area with slight pale streaks; cilia yellowish white; the underside white irrorated with brown, the costal area tinged with rufous.

Hab. U.S.A., California, Sta Barbara (*D'Urban*), 2 ♀ type. *Exp.* 40 millim.

4678. Cea leucanidia, n. sp.

Head and thorax white slightly tinged with rufous; abdomen white tinged with ochreous. Fore wing ochreous white slightly tinged with rufous, the veins with slight pale streaks; a slight

Fig. 119.—*Cea leucanidia*, ♂. ½.

dark streak on medial area in submedian fold curved upwards at extremity to vein 2; slight dark streaks in the interspaces above

and below vein 4 and below extremity of vein 3. Hind wing white faintly tinged with ochreous; the underside with the costal area faintly tinged with rufous.

Hab. U.S.A., Oregon, Crooked R. (*Walsingham*), 1 ♂, 5 ♀ type. *Exp.* 34–40 millim.

*4679. Cea immacula. (Plate CXLIII. fig. 14.)

Cea immacula, Grote, Papilio, iii. p. 78 (1883).
Cea immaculata, Smith, Cat. Noct. N. Am. p. 214.

Head and thorax very pale yellow; abdomen white. Fore wing almost uniform very pale yellow. Hind wing pure silky white.

Hab. U.S.A., Arizona. *Exp.* 27 millim. This species is unknown to me; figured from a drawing from type in Mus. Brooklyn Soc. Arts and Sciences.

Genus **ARENOSTOLA**, nov.

Type, *A. phragmitidis*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head and moderately fringed with hair in front, the 3rd short, porrect; frons smooth, with tuft of hair; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, the prothorax with slight spreading crest, the metathorax without crest; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced and acute, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male with fascicles of long cilia.

4680. Arenostola lutosa.

Noctua lutosa, Hübn. Eur. Schmett., Noct. f. 232 (1802); Grube, Tijds. v. Ent. xviii. p. 118, pl. 7. ff. *a–e*; Tijds. v. Ent. xli. p. 93, pl. 2. ff. 1–3; Staud. Cat. Lep. pal. p. 190.
Noctua crassicornis, Haw. Lep. Brit. p. 173 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 72.
Nonagria vectis, Curt. Brit. Ent. pl. 459 (1825).
Nonagria pilicornis, Steph. Ill. Brit. Ent., Haust. iii. p. 72, pl. 29. f. 1 (1829).
Nonagria bathyerga, Frr. Neue Schmett. ii. p. 122, pl. 170. f. 1 (1835); Dup. Lép. Fr., Suppl. iii. p. 343, pl. 32. f. 1; Herr.-Schäff. Eur. Schmett., Noct. ff. 307, 312–3.

Head and thorax ochreous whitish; abdomen ochreous whitish dorsally faintly tinged with rufous. Fore wing ochreous whitish irrorated with a few black scales; a postmedial series of black points excurved from costa to vein 4, then oblique. Hind wing white tinged with ochreous and irrorated with a few fuscous scales; traces of a curved fuscous postmedial line; the underside with the

costal half irrorated with black, some black points on termen from apex to discal fold.

Fig. 120.—*Arenostola lutosa*, ♂. ½.

Hab. Britain, Leech Coll.; Germany, Zeller and Frey Colls.; Austria; Hungary; Switzerland; Rumelia; Sweden; Russia; W. Turkestan, Saisan, Issyk-Kul; E. Siberia, Ussuri. *Exp.* 40–54 millim.

Larva. Meyr. Brit. Lep. p. 119; Barrett, Lep. Brit. v. p. 117, pl. 199. f. 1. Whitish ochreous tinged with pink; head pale red-brown. Food-plant, in stems of *Phragmites*. 3–6.

Sect. II. Antennæ of male minutely ciliated.

A. Fore wing with pale streaks on the veins, at least on terminal area.
  a. Fore wing without black streak through upper part of cell.
    a^1. Fore wing without ante- and postmedial series of black points ..... *phragmitidis*.
    b^1. Fore wing with ante- and postmedial series of black points.
      a^2. Head, thorax, and fore wing strongly tinged with red-brown ..... *brevilinea*.
      b^2. Head, thorax, and fore wing hardly tinged with red-brown ..... *impudica*.
  b. Fore wing with black streak through upper part of cell.
    a^1. Fore wing with incomplete curved postmedial line... *inquinata*.
    b^1. Fore wing without postmedial line ..... *variana*.
B. Fore wing with dark streaks on the veins.
  a. Fore wing with black streak in terminal half of cell.
    a^1. Fore wing without black streak below base of cell ... *interlata*.
    b^1. Fore wing with black streak below base of cell ..... *stigmatica*.
  b. Fore wing without black streak in terminal half of cell.
    a^1. Fore wing with the veins of terminal area defined by whitish streaks ..... *defecta*.
    b^1. Fore wing with the veins not defined by whitish streaks.
      a^2. Fore wing narrow and elongate.
        a^3. Fore wing irrorated with brown ..... *procera*.
        b^3. Fore wing not irrorated with brown ..... *elymi*.
      b^2. Fore wing shorter and broader.
        a^3. Fore wing with the reniform more or less defined..... *fluxa*.
        b^3. Fore wing with the reniform obsolete.
          a^4. Hind wing suffused with fuscous ..... *pygmina*.
          b^4. Hind wing ochreous white slightly irrorated with fuscous ..... *mabillei*.

C. Fore wing without streaks on the veins.
a. Hind wing pure white; fore wing irrorated with white ..... *mollicella*.
b. Hind wing suffused with brown.
a^1. Fore wing pale flesh-colour.
a^2 Fore wing with dark irroration..... *modesta*.
b^2. Fore wing without dark irroration ..... *deserticola*.
b^1. Fore wing white.
a^2. Fore wing with postmedial series of dark points.
a^3. Hind wing strongly suffused with fuscous, especially on terminal area ..... *bondi*.
b^3. Hind wing slightly tinged with brown ..... *extrema*.
b^2. Fore wing without postmedial series of dark points ..... *sohn-retheli*.

4681. Arenostola phragmitidis.

Noctua phragmitidis, Hübn. Eur. Schmett., Noct. f. 230 (1802); Dup. Lép. Fr. vii. pt. 1, p. 90, pl. 106. f. 5; Frr. Neue Schmett, pl. 515. f. 1; Staud. Cat. Lep. pal. p. 190.
Noctua semicana, Esp. Schmett. iv. pl. 189. f. 5 (1804).
Leucania verecunda, Ev. Bull. Soc. Mosc. 1848, iii. p. 219.
Xanthodes morawitzii, Mén. Enum. Corp. Anim. Mus. iii. pl. 16. f. 8 (1863).

Head and thorax whitish, the latter with the vertex tinged with red-brown; palpi brownish; legs tinged with brown; abdomen ochreous white dorsally tinged with brown, ventrally with rufous.

Fig. 121.—*Arenostola phragmatidis*, ♂. ½.

Fore wing whitish tinged with rufous, the costal area whiter, the veins slightly streaked with whitish; cilia rufous. Hind wing ochreous suffused with brown, the veins slightly streaked with ochreous; cilia ochreous white; the underside whitish tinged with ochreous.

Hab. Britain, Scotland, Forres (*Salvage*), England (*Doubleday*), Leech Coll.; Holland; Denmark, Frey Coll.; Germany, Zeller and Leech Colls.; Switzerland; Russia, Sarepta, Zeller Coll.; W. Turkestan, Turcomania, Issyk-kul; Tibet, Amdo. *Exp.* 32–38 millim.

Larva. Meyr. Brit. Lep. p. 120; Barrett, Lep. Brit. v. p. 125, pl. 199. f. 2.
Whitish ochreous; subdorsal line broad, interrupted, purplish fuscous; lateral line narrow, similar; head black; thoracic plate brown. Food-plant, in stems and on leaves of *Phragmites*. 9–6.
Pupa on the ground.

4682. Arenostola brevilinea.

Nonagria brevilinea, Fenn. Ent. Mo. Mag. 1. p. 107 (1864); Knaggs, Ent. Ann. 1865, p. 105, f. 3; Staud. Cat. Lep. pal. p. 188.
Nonagria sinelinea, Farn, Entom. xi. p. 103 (1878).

Head and thorax brown mixed with greyish and slightly irrorated with black; palpi with the 2nd joint at sides and frons at sides black; tarsi tinged with black; abdomen ochreous brown slightly irrorated with black. Fore wing pale red-brown irrorated with black, the veins of terminal half with slight pale streaks defined on each side by black streaks; short black streaks from base in and below cell; antemedial line represented by black points on the veins; a black point at lower angle of cell and a diffused black shade beyond the angle; postmedial line represented by a series of black points excurved from below costa to vein 4, then oblique; faint traces of a subterminal line. Hind wing ochreous brown suffused and irrorated with fuscous especially on terminal area leaving the termen and cilia more ochreous; the underside ochreous white irrorated with black especially on terminal area.

Ab. 1. *sinelinea*. Fore wing without the black streaks at base.

Hab. Britain, Norfolk (*Wheeler*), Leech Coll. *Exp.* 32–38 millim.

Larva. Meyr. Brit. Lep. p. 120; Barrett, Lep. Brit. v. p. 121, pl. 200. f. 1.

Pale ochreous freckled with brown; dorsal, subdorsal, and spiracular lines orange edged with pale yellow; head pale brown. Food-plant, *Phragmites*, 5–6; the larva when young feeding in the stems.

4683. Arenostola impudica.

Nonagria impudica, Staud. Rom. Mém. vi. p. 470, pl. 9. f. 3 (1892); id. Cat. Lep. pal. p. 188.

♂. Head and thorax ochreous whitish faintly tinged with rufous and irrorated with a few black scales especially on upper edge of patagia; palpi brownish except 3rd joint; frons black at sides; legs brownish; abdomen ochreous white slightly irrorated with brown. Fore wing grey-white irrorated with black and faintly tinged with brown, the costal edge ochreous, the veins of terminal half streaked with whitish; antemedial line represented by black points on the veins; reniform with hardly traceable dark outline; a postmedial series of black points on veins 6 to 1, excurved to vein 4, then oblique; cilia ochreous mixed with brown. Hind wing white tinged with brown especially on terminal area; postmedial black points on veins 4, 3, 2; cilia white; the underside white, the costal area and terminal area to vein 2 tinged and irrorated with brown, traces of a postmedial series of dark points on the veins.

Ab. 1. Fore wing with short black streak below base of cell.

Hab. E. Turkestan, Ili; E. Siberia, Amurland, 1 ♂, Ussuri. *Exp.* 38 millim.

4684. Arenostola inquinata. (Plate CXLIII. fig. 15.)

Nonagria inquinata, Guen. Noct. i. p. 104 (1852); Smith, Cat. Noct. N. Am. p. 183.
Tapinostola orientalis, Grote, Bull. U.S. Geol. Geog. Surv. Terr. vi. p. 583 (1882); Smith, Cat. Noct. N. Am. p. 184.

Head and tegulæ red-brown mixed with dark brown; thorax ochreous tinged with red-brown; abdomen ochreous. Fore wing pale ochreous tinged with rufous and irrorated with black, the veins streaked with whitish; a diffused blackish streak in upper part of cell from base to just beyond upper angle; a slight black streak in submedian fold on medial area; a rather indistinct strongly excurved postmedial line from vein 7 to end of streak in submedian fold; a terminal series of black striæ; cilia ochreous mixed with black and intersected by pale streaks at the veins. Hind wing pale ochreous slightly irrorated with brown except at base; traces of a curved postmedial line; a slight dark terminal line; the underside irrorated with fuscous except the cell and inner area; a slight dark discoidal striga.

Hab. Canada, Renfrew Co., 1 ♂, Manitoba, Winnipeg, 1 ♂, 1 ♀; U.S.A., Maine, Kittery Point, New York (*Doubleday*), 1 ♀ type, Buffalo. *Exp.* 26 millim.

*4685. Arenostola variana.

Tapinostola variana, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 432; Smith, Cat. Noct. N. Am. p. 184.

Head and thorax red-brown mixed with dark brown; thorax ochreous tinged with red-brown; abdomen ochreous. Fore wing pale ochreous tinged with rufous and irrorated with black, the veins streaked with whitish; a diffused blackish streak in upper part of cell from base to just beyond upper angle; a slight black streak in submedian fold on medial area; no postmedial line; a terminal series of black striæ; cilia ochreous mixed with black and intersected by pale streaks at the veins. Hind wing pale ochreous slightly irrorated with brown except at base; a slight dark terminal line; the underside irrorated with fuscous except the cell and inner area, a slight dark discoidal striga.

Hab. U.S.A., Michigan, Detroit. *Exp.* 26 millim. This species is unknown to me.

4686. Arenostola interlata. (Plate CXLIII. fig. 16.)

Nonagria interlata, Wlk. xi. 713 (1857).

♀. Head and thorax ochreous mixed with rufous and dark brown; abdomen ochreous tinged with rufous. Fore wing ochreous white irrorated with purple-brown leaving pale streaks in discal and submedian folds, the veins with dark streaks; a black-brown streak in cell towards extremity and a small spot on middle of discocellulars; a terminal series of small triangular black-brown

spots; cilia ochreous white mixed with brown. Hind wing ochreous white, the terminal half slightly tinged with brown; a fine waved brown terminal line from apex to submedian fold; the underside with the costal area irrorated with brown, a brown discoidal spot.

Hab. Natal, Durban (*Krauss*), 1 ♀ type. *Exp.* 32 millim.

4687. Arenostola stigmatica. (Plate CXLIII. fig. 17.)

Leucania stigmatica, Ev. Bull. Mosc. 1855, iii. p. 191; Staud. Cat. Lep. pal. p. 188.
Tapinostola lagunica, Græs. Berl. ent. Zeit. xxxii. p. 344 (1888).

♂. Head and thorax pale ochreous slightly tinged with rufous; the palpi, sides of frons, and legs tinged with brown; abdomen pale ochreous tinged with brown, the anal tuft with rufous. Fore wing pale ochreous slightly tinged with rufous; a diffused streak of black scales below base of cell, and another in and beyond lower extremity of cell; a whitish mark at lower angle of cell; the veins towards termen with slight brown streaks; a terminal series of slight brown lunules; cilia brown with pale lines near base and near tips. Hind wing white tinged with ochreous; cilia with brownish line near base and white tips; the underside slightly irrorated with brown, a slight dark discoidal striga.

Hab. Russia, Urals; Mongolia, Uliassutai, 1 ♂; E. Siberia, Kentei, Amurland. *Exp.* 30 millim.

4688. Arenostola defecta. (Plate CXLIII. fig. 18.)

Senta defecta, Grote, 6th Rept. Peab. Ac. Sci. p. 29 (1874); id. Bull. Buff. Nat. Sci. ii. pl. 1. f. 4; Smith, Cat. Noct. N. Am. p. 183.

♀. Head, thorax, and abdomen pale grey tinged with red-brown. Fore wing pale grey tinged with red-brown; a red-brown shade in and below cell expanding beyond the cell to termen below apex, the veins beyond the cell defined by pale streaks above and below; the terminal half of median nervure streaked with white; a narrow blackish discoidal lunule, its lower half with white annulus; a postmedial series of black points on veins 7 to 1, oblique below vein 6; a terminal series of black points. Hind wing brownish white; traces of a curved postmedial line; a terminal series of dark points from apex to vein 2; the underside with faint discoidal points.

Hab. U.S.A., 1 ♀ type, Eastern, Middle, and Central States, Massachusetts, New York, Maryland. *Exp.* 32 millim.

4689. Arenostola procera. (Plate CXLIII. fig. 19.)

Tapinostola procera, Staud. Stett. ent. Zeit. 1889, p. 47; id. Cat. Lep. pal. p. 189.

Head and thorax ochreous white mixed with brown; palpi and legs brownish; abdomen ochreous white tinged with brown. Fore

wing ochreous white tinged with pale rufous and rather thickly irrorated with fuscous brown, the veins slightly streaked with brown; traces of a postmedial series of dark points on the veins, excurved to vein 4, then oblique; a terminal series of brown striæ. Hind wing white tinged with ochreous; the underside with the costal area and terminal area to vein 2 irrorated with brown.

Hab. W. Turkestan, Issyk-kul; E. Turkestan, Ili, Thian-Shan Mts.; Mongolia, Uliassutai, 1 ♂; Kashmir, Nubra (*McArthur*), 1 ♀. *Exp.* 30–34 millim.

4690. Arenostola elymi.

Leucania elymi, Treit. Schmett. Eur. v. 2, p. 294 (1825); Dup. Lép. Fr., Suppl. iii. p. 334, pl. 31. f. 1; Herr.-Schäff. Eur. Schmett., Noct. f. 346; Oberth. Ét. Ent. v. p. 71, pl. 9. f. 2; Staud. Cat. Lep. pal. p. 189.
Tapinostola saturatior, Staud. Stett. ent. Zeit. 1889, p. 47.

Head and thorax ochreous white tinged with pale rufous; palpi and legs brownish; abdomen ochreous white tinged with rufous except at base. Fore wing ochreous white tinged with rufous, the inner area and a streak in discal fold beyond the cell rather paler, the veins slightly streaked with brown; the antemedial line represented by slight dark points on the veins; a postmedial series of slight dark points on the veins excurved from costa to vein 4, then oblique; cilia ochreous mixed with brown. Hind wing white tinged with ochreous; the underside with the costal area slightly tinged with rufous.

Ab. 1. *saturatior*. Fore wing darker or with dark streaks.—St. Petersburg, Ussuri.

Hab. Britain, Leech Coll.; Denmark, Leech Coll.; Germany, Zeller, Frey, and Leech Colls.; Sweden; Russia, Livonia, St. Petersburg; E. Siberia, Ussuri. *Exp.* 36–40 millim.

Larva. Meyr. Brit. Lep. p. 120; Barrett, Lep. Brit. v. p. 113, pl. 198. f. 3.

Whitish ochreous tinged with pink; head reddish brown. Food-plant, bases of stems of *Elymus arenarius*. 4–5.

4691. Arenostola fluxa.

Noctua fluxa, Hübn. Eur. Schmett., Noct. f. 413 (1808); Herr.-Schäff. Eur. Schmett., Noct. f. 335.
Nonagria junci, Boisd. Gen. & Ind. Meth. p. 134 (1840).
Leucania hellmanni, Ev. Bull. Mosc. 1843, iii. p. 548; Frr. Neue Schmett. pl. 429. f. 3 (1844); Herr.-Schäff. Eur. Schmett., Noct. ff. 42, 338; Staud. Cat. Lep. pal. p. 189.
Leucania extrema, Herr.-Schäff. Eur. Schmett., Noct. f. 336 (nec Hübn.).
Tapinostola saturata, Staud. Cat. Lep. Eur. p. 107 (1871).
Tapinostola expressata, Kruhl. Rev. Russ. Ent. vii. p. 11 (1907).

Head and thorax pale rufous; antennæ whitish; abdomen whitish tinged with rufous. Fore wing pale rufous, the veins of terminal half irrorated with brown and white; faint traces of a sinuous antemedial line; reniform represented by a small whitish annulus to lower part with brownish centre; postmedial line

represented by a double series of faint dark points on veins 6 to 1, oblique below vein 4; a slight pale line at base of cilia. Hind wing whitish faintly tinged with rufous especially on termen, the cilia rather paler; the underside whitish, the costal area tinged with rufous, a fine sinuous brown terminal line from apex to vein 2.

Ab. 1. *hellmanni*. Fore wing ochreous whitish tinged and irrorated with brown and with hardly any rufous tinge.

Hab. Britain, Leech Coll.; Holland; Germany, Zeller, Frey, and Leech Colls.; Austria; Sweden; N.W. Russia, Urals; W. Turkestan, Issyk-kul; W. Siberia, Altai; Tibet, Amdo. *Exp.* 26–30 millim.

Larva. Meyr. Brit. Lep. p. 121; Barrett, Lep. Brit. v. p. 108, pl. 198. f. 1. Yellowish white or reddish, the ventral surface white; lateral line shining white; spiracles black; head yellow-brown. Food-plant, in stems of *Calamagrostis epigeios*. 6.

4692. Arenostola pygmina.

Noctua pygmina, Haw. Prod. Lep. Brit. p. 13 (1802), non descr.; id. Lep. Brit. p. 176 (1809).
Noctua fulva, Hübn. Eur. Schmett., Noct. f. 496 (1818); Dup. Lép. Fr. vii. pt. 1, p. 87, pl. 106. f. 4; Frr. Neue Schmett. pl. 501. f. 1; Staud. Cat. Lep. pal. p. 190.
Nonagria fluxa, Dup. Lép. Fr., Suppl. iii. p. 351, pl. 32. f. 4 (nec Hübn.).
Noctua extrema, Herr.-Schäff. Eur. Schmett., Noct. ff. 332–3 & 337 (nec Hübn.).
Noctua hellmanni, Herr.-Schäff. Eur. Schmett., Noct. f. 339 (nec Ev.).
Tapinostola concolor, Tutt, Ent. Month. Mag. xxv. p. 52 (nec Guen.); id. Ent. Rec. iv. p. 72, pl. C. f. 2.
Tapinostola transversa, Staud. Cat. Lep. pal. p. 190 (1901).

Head and thorax whitish tinged with rufous; abdomen whitish tinged with brown. Fore wing whitish tinged with rufous and slightly irrorated with brown, the costal edge whitish, the veins with slight brown streaks; traces of a curved double series of dark points on the veins. Hind wing whitish suffused with brown; cilia white, yellowish at base. Underside whitish irrorated with brown, the disk of fore wing suffused with brown.

Ab. 1. Fore wing pale ochreous, the postmedial line entire and dentate, the medial fascia strong.—Algeria.

Ab. 2. *extrema*, H.-S., 337 = *concolor*, Tutt (nec Guen.). Fore wing with the ground-colour ochreous white.

Ab. 3. *fulva*. Fore wing redder.

Ab. 4. *transversa*. Fore wing browner, the ante- and postmedial lines dark and entire.

Hab. Britain, Leech Coll.; France; Germany, Zeller, Frey, and Leech Colls.; Hungary; Switzerland; Spain, Bilbao; Sicily; Sweden; Finland; Russia, Livonia, Zeller Coll., Esthonia, Frey Coll., St. Petersburg, Zeller Coll.; W. Siberia, Altai; E. Turkestan, Ili; E. Siberia, Amur. *Exp.* 26–28 millim.

Larva. Meyr. Brit. Lep. p. 120; Barrett, Lep. Brit. v. p. 103, pl. 197. f. 2. Whitish ochreous tinged with pink; subdorsal and spiracular lines brownish; head and thoracic plate pale brown. Food-plant, the lower part of stem of *Carex paludosa*. 6–7.

*4693. Arenostola mabillei. (Plate CXLIII. fig. 20.)

Tapinostola mabillei, Lucas, Bull. Soc. Ent. Fr. 1907, p. 342.

♀. Head and thorax ochreous white slightly mixed with fuscous; abdomen ochreous white irrorated with black. Fore wing ochreous white tinged with flesh-pink and irrorated with black, a blackish streak on median nervure and on the veins beyond the cell; a postmedial series of black points, excurved to vein 4, then oblique; traces of a subterminal series of black points. Hind wing ochreous white irrorated with fuscous. Underside of fore wing with patches of fuscous suffusion below and beyond lower angle of cell and beyond upper angle.

Hab. Algeria, Le Tarf, type † ♀ in Coll. Lucas. *Exp.* 26 millim.

*4694. Arenostola mollicella. (Plate CXLIII. fig. 21.)

Tapinostola mollicella, Püng. Iris, xix. p. 222, pl. vii. fig. 17 (1907).

♂. Head and thorax grey-white irrorated with dark brown; palpi with the 2nd joint blackish at sides; tarsi blackish ringed with white; abdomen white. Fore wing pale cupreous brown thickly irrorated with white especially on costal area; subbasal and antemedial lines represented by slight dark striæ from costa defined by white; a white point in cell near base followed by four pairs of white points in the cell; an antemedial point on vein 1; postmedial line represented by two black striæ from costa, bent outwards below costa, then represented by a rather oblique series of blackish points on the veins followed by white points, with white and black striæ on costa beyond them; traces of a subterminal series of blackish points on the veins; a terminal series of black points with white points before them. Hind wing pure white; the underside with the costal area irrorated with brown, a slight discoidal spot and a terminal series of black points from apex to vein 2.

Hab. Tibet, Kuku Nor, type † ♂ in Coll. Püngeler. *Exp.* 22 millim.

4695. Arenostola modesta. (Plate CXLIII. fig. 22.)

Calamia modesta, Staud. Iris, xii. p. 372 (1900); id. Cat. Lep. pal. p. 190.

♀. Head and thorax ochreous whitish tinged with brown; abdomen whitish tinged with brown. Fore wing pinkish white tinged with brown and with dark irroration. Hind wing ochreous whitish suffused with brown, the cilia whiter; the underside whitish tinged and irrorated with brown.

Hab. Palestine, 1 ♀. *Exp.* 38 millim.

4696. Arenostola deserticola. (Plate CXLIII. fig. 23.)

Calamia deserticola, Staud. Iris, xii. p. 371, pl. 5. f. 10 (1900); id. Cat Lep. pal. p. 190.

♂. Head and thorax brown mixed with whitish; tarsi brown ringed with whitish; abdomen grey-brown. Fore wing pale flesh-colour with a brownish tinge. Hind wing grey-brown; cilia whitish tinged with flesh-colour; the underside whitish tinged with brownish flesh-colour.

Hab. Algeria, Biskra, Hammam-es-salahin (*Walsingham*), 1 ♂. *Exp.* 36 millim.

4697. Arenostola bondi.

Nonagria bondii, Knaggs, Trans. Ent. Soc. 1861, Proc. p. 133; Mill. Icones, ii. pl. 87. f. 1; Staud. Cat. Lep. pal. p. 189.
Tapinostola morrisii, Tutt, Ent. Rec. iv. p. 72, pl. C. f. 1 (1893), nec Dale.

Head and thorax white faintly tinged with brown; palpi at sides and legs suffused with brown; abdomen ochreous white tinged with reddish brown. Fore wing brownish white irrorated with a few black scales; the costal edge brown towards base; subbasal line represented by slight black points on costa and below cell; traces of a dentate antemedial line; traces of a minutely dentate postmedial line with slight black points on the veins, slightly bent outwards below costa, excurved to vein 4, then oblique. Hind wing ochreous white suffused with brown, leaving slight pale streaks on the veins of terminal area; traces of a curved postmedial line; cilia white. Underside of fore wing suffused with brown except marginal areas; hind wing white irrorated with brown especially on costal area and terminal area to vein 2, a black discoidal point and indistinct curved postmedial line.

Hab. Britain (*Doubleday*), Leech Coll.; Germany, Rugen I.; ? Italy, Aquila; Greece. *Exp.* 30–34 millim.

Larva. Meyr. Brit. Lep. p. 121; Barrett, Lep. Brit. v. p. 110, pl. 198. f. 2.

Dirty white, the 1st and anal somites brownish; dorsal line faint, pale; head brownish; a black point on each proleg. Food-plant, *Festuca arundinacea*. 8.

4698. Arenostola extrema.

Noctua extrema, Hübn. Eur. Schmett., Noct. f. 412 (1808); Staud. Cat. Lep. pal. p. 189.
Nonagria concolor, Guen. Noct. i. p. 103 (1852); Tutt, Ent. Rec. iv. p. 72, pl. C. f. 3; Meyr. Brit. Lep. p. 121; Barrett, Lep. Brit. v. p. 105, pl. 197. f. 3.

Head, thorax, and abdomen white tinged with ochreous, the palpi and legs with brownish. Fore wing white tinged with ochreous and irrorated with a few blackish scales, the veins slightly paler; antemedial line represented by black points on the veins;

a postmedial series of black points on the veins, bent outwards below costa, excurved to vein 4, then oblique ; a terminal series of dark striæ. Hind wing ochreous white suffused with brown, the cilia yellowish white. Underside white irrorated with brown; fore wing with the disk tinged with brown ; hind wing with oblique black striga on upper discocellular.

Hab. Britain, Stephens Coll. ; Germany ; Austria ; Hungary ; Russia, Urals ; Persia (*Haberhauer*), 1 ♂ ; E. Turkestan Ili. *Exp.* 28 millim.

*4699. Arenostola sohn-retheli. (Plate CXLIII. fig. 24.)

Tapinostola Sohn-Retheli, Püng. Iris, xix. p. 222, pl. vii. f. 6 (1907).

♂. Head, thorax, and abdomen ochreous white ; palpi fuscous ; antennæ and legs tinged with fuscous, the tarsi slightly ringed with white. Fore wing glossy white with a faint ochreous tinge and very slightly irrorated with brown, the apex slightly tinged with brown ; a terminal series of slight dark striæ ; cilia white mixed with brown and with faint dark line near base. Hind wing glossy white slightly tinged with fuscous especially on termen ; cilia white with a faint dark line through them. Underside of fore wing suffused with fuscous brown except terminal area which is slightly irrorated with fuscous ; hind wing with the costal and terminal areas slightly irrorated with fuscous.

Hab. C. Italy, Abruzzi, Pescacostanzo, type † ♂ in Coll. Püngeler. *Exp.* 32 millim.

Genus **SPHETTA**.

	Type.
Sphetta, Wlk. xxxii. 457 (1865)	*apicalis*.

Proboscis absent ; palpi obliquely upturned, the 2nd joint reaching to vertex of head and broadly fringed with hair in front, the 3rd long ; frons smooth, with large tuft of hair above and a ridge of hair between antennæ ; eyes large, round ; antennæ of male minutely ciliated ; thorax clothed with rough hair, but without crests ; tibiæ fringed with long hair ; abdomen elongate and rather slender, some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved, crenulate ; vein 3 from well before angle of cell ; 5 from just above angle ; 6 from just below upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell ; 5 obsolescent from middle of discocellulars ; 6, 7 from upper angle ; 8 anastomosing with the cell near base only.

4700. Sphetta apicalis.

Sphetta apicalis, Wlk. xxxii. 457 (1865) ; Moore, Lep. Ceyl. ii. p. 114, pl. 121. ff. 2, 2 *a* ; Hmpsn. Moths Ind. ii. p. 167.
Sphetta biocellata, Moore, P. Z. S. 1879, p. 405.

♂. Head and thorax dark reddish brown mixed with pale ochreous, the vertex of head paler ; tarsi black-brown, the mid and hind tarsi with pale rings ; abdomen greyish brown. Fore wing

greyish ochreous tinged with brown; a brownish-white patch on costa from beyond middle to apex where it narrows to a point, defined below by black-brown suffusion arising in end of cell before the small triangular whitish reniform stigma, the costa and veins on this patch faintly streaked with brown; subbasal line represented by double dark striæ from costa and cell; an indistinct double antemedial line, oblique from costa to median nervure; an indistinct very oblique dentate line from lower angle of cell to inner margin; three indistinct minutely dentate oblique postmedial lines from

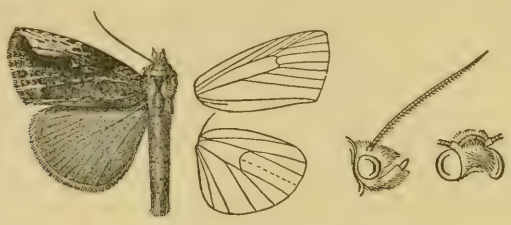


Fig. 122.—*Sphetta apicalis*, ♂. ½.

vein 5 to inner margin with dark points on the veins; faint traces of a pale subterminal line defined on each side by slight dark marks; a terminal series of slight black lunules defined on inner side by whitish; cilia brown mixed with ochreous white. Hind wing uniform greyish brown; the underside ochreous white tinged with brown, a small discoidal spot, two indistinct waved postmedial lines, and a terminal series of small black lunules.

♀. Fore wing more uniformly suffused with brown.

Ab. 1. *biocellata*. Head, thorax, and abdomen much darker in both sexes; fore wing nearly uniform dark brown except the costal patch, the postmedial lines reduced to black points or pale streaks on the veins; hind wing black-brown.

Hab. Bombay (*Leith*), 1 ♀ type *biocellata*; Ceylon, Kandy (*Templeton, Mackwood*), 1 ♂, 2 ♀ type; Bali (*Doherty*), 1 ♂. *Exp.* ♂ 40, ♀ 50–60 millim.

Genus **ARCHANARA**.

	Type.
Archanara, Wlk. xxxv. 1737 (1866)	*polita*.

Proboscis aborted, minute; palpi porrect, extending to extremity of the long triangular corneous frontal process, bifid at extremity and concealed in hair; eyes large, round; antennæ of male minutely serrate and fasciculate; thorax clothed with hair and hair-like scales and without distinct crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base and slight basal crest. Fore wing with the apex somewhat produced and acute, the termen obliquely curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars, 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with more or less developed white centre to lower part of reniform ..... *geminipuncta.*
B. Fore wing with the lower part of reniform black, more or less defined by white or by white points.
a. Hind wing with dark discoidal spot or lunule on underside.
a^1. Fore wing with the postmedial line entire, dentate . *resoluta*
b^1. Fore wing with the postmedial line reduced to short black and white streaks ..... *dissoluta*
b. Hind wing without dark discoidal spot on underside.
a^1. Fore wing with postmedial series of black points.
a^2. Fore wing greyish ochreous tinged with brown.. *neurica.*
b^2. Fore wing rufous tinged with grey ..... *polita.*
b^1. Fore wing without postmedial series of black points ..... *phragmitidicola.*
C. Fore wing with the lower part of reniform defined by black points ..... *sparganii.*
D. Fore wing with the lower part of reniform not defined by white or black points.
a. Fore wing with postmedial series of black points.
a^1. Fore wing with terminal series of black points.
a^2. Fore wing with distinct golden gloss ..... *ærata.*
b^2. Fore wing without golden gloss ..... *oblonga.*
b^1. Fore wing without terminal series of black points.
a^2. Fore wing ochreous slightly tinged with rufous ... *subflava.*
b^2. Fore wing suffused with fuscous in male, more ochreous in female ..... *alameda.*
c^2. Fore wing pale flesh-colour to dark red-brown ... *algæ.*
b. Fore wing without postmedial series of black points ... *læta.*

4701. Archanara geminipuncta.

Noctua geminipuncta, Haw. Lep. Brit. p. 176 (1809); Hatchett, Trans. Ent. Soc. 1812, p. 327, pl. 9. f. 2; Steph. Ill. Brit. Ent., Haust. iii. p. 79; Staud. Cat. Lep. pal. p. 187.
Noctua paludicolor, Hübn. Eur. Schmett., Noct. ff. 624, 637 (1818); Dup. Lép. Fr., Suppl. iii. p. 357, pl. 33. ff. 1, *a–c*; Guen. Ann. Soc. Ent. Fr. 1833, p. 447, pl. 16. f. A.
Noctua guttans, Hübn. Eur. Schmett., Noct. ff. 628–9 (1818).
Noctua arundinis, Sepp, Ins. iv. p. 65, pl. 20. ff. 6, 7 (1836).
Nonagria nigricans, Staud. Cat. Lep. Eur. p. 46 (1861).

Head and thorax rufous; abdomen rather paler rufous. Fore wing rufous; antemedial line represented by traces of dark points

Fig. 123.—*Archanara geminipuncta*, ♂. ½.

on the veins; the orbicular represented by a dark point, the reniform by a small white or pale spot at lower angle of cell defined by fuscous, usually with another white point above it; traces of a

double postmedial line excurved from costa to vein 4, then oblique; the veins with faint dark streaks towards termen. Hind wing pale rufous. Underside of fore wing brown, the costal and terminal areas whitish tinged with rufous; hind wing whitish tinged with rufous and slightly irrorated with brown, traces of a dark discoidal lunule.

Ab. 1. *nigricans*. Wholly suffused with blackish; fore wing with the reniform usually obsolescent.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; Spain, Andalusia; N. Italy; Sweden; Russia, Livonia, Sarepta. *Exp.* 26–36 millim.

Larva. Meyr. Brit. Lep. p. 111; Barrett, Lep. Brit. v. p. 88, pl. 195. f. 2.

Pinkish ochreous; spiracular line paler; head dark brown. Food-plant, in stems of *Phragmites*. 5–6.

4702. Archanara resoluta, n. sp. (Plate CXLIII. fig. 25.)

♂. Head and thorax red-brown; antennæ whitish; abdomen greyish tinged with red-brown. Fore wing greyish suffused with red-brown and slightly irrorated with dark brown; a brownish shade below median nervure and between veins 4 and submedian fold to near termen; the costal edge dark brown; a faint curved brown subbasal line from costa to submedian fold; antemedial line rather indistinct, oblique, brown, dentate, angled inwards to short dark streaks on the veins, with a brown point before it in cell; a whitish streak on terminal part of median nervure, its extremities slightly bent upwards and with a short dark streak between them; postmedial line blackish, oblique from costa to vein 7, then dentate and inwardly oblique; subterminal line formed by a series of small diffused dark marks, angled outwards at vein 7, then oblique; a terminal series of small black spots. Hind wing whitish suffused with brown; the underside whitish suffused with rufous and irrorated with brown, a slight discoidal bar and diffused curved postmedial line.

Hab. Japan, Tokio (*Maries*), 1 ♂ type. *Exp.* 30 millim.

4703. Archanara dissoluta.

Noctua neurica, Hübn. Eur. Schmett., Noct. ff. 659-661 (1818), nec f. 381; Dup. Lép. Fr. vii. p. 1, p. 85, pl. 106. f. 2; Herr.-Schäff. Eur. Schmett., Noct. ff. 347–8.

Noctua dissoluta, Treit. Schmett. Eur. v. (2) p. 319 (1825); Staud. Cat. Lep. pal. p. 188.

Nonagria hessei, Boisd. Gen. & Ind. Meth. p. 134 (1840).

Nonagria arundineta, Schmidt, Stett. ent. Zeit. 1858, p. 369.

(*arundineta*.) Head and thorax ochreous greyish tinged with red-brown, the tegulæ edged with red-brown; palpi irrorated with brown; frons brown at sides; legs brown, the tarsi with slight pale rings; abdomen ochreous whitish suffused with red-brown except at

base. Fore wing ochreous greyish with a diffused red-brown shade between median nervure and vein 4 and submedian fold from base to termen, the median nervure and veins beyond the cell slightly streaked with dark brown; antemedial line represented by slight dark points on the veins; orbicular represented by a slight elongate mark below subcostal nervure defined by dark brown except towards base; reniform a narrow lunule, its upper part faintly defined by brown, its lower with brown spot in centre and white annulus defined by brown, constricted at middle and with curved brown mark before its upper part; postmedial line represented by a series of minute dark streaks on the veins with slight white marks beyond them on veins 6–3, excurved from costa to vein 4, then oblique; a terminal series of small dark lunules; cilia with a slight dark line through them. Hind wing ochreous whitish tinged with brown especially on terminal area; a faint brown discoidal lunule; indistinct pale curved postmedial line defined by brown suffusion on inner side and terminal series of slight dark lunules; the underside grey irrorated with brown, a dark discoidal spot and traces of curved postmedial line.

Ab. 1. Head, thorax, and fore wing much more rufous.

Ab. 2. *dissoluta*. Head, thorax, and fore wing purplish red-brown, the last with the markings almost obsolete, the reniform represented by a 3-shaped white mark defining it except on inner side, the postmedial line by a series of faint whitish points on the veins, the terminal lunules hardly traceable.

Hab. Britain, Leech Coll.; France, Sand Coll.; Holland; Denmark; Germany, Zeller, Frey, and Leech Colls.; Switzerland; S. Russia; Persia; W. Turkestan, Turcomania. *Exp.* 26–34 millim.

Larva. Meyr. Brit. Lep. p. 110; Barrett, Lep. Brit. v. p. 91, pl. 196. f. 1.

Pale pinkish ochreous; spiracular line pale, slender, indistinct; head reddish brown. Food-plant, in stems of *Phragmites*. 4–6.

4704. Archanara neurica.

Noctua neurica, Hübn. Eur. Schmett., Noct. f. 381 (1808); Staud. Cat. Lep. pal. p. 188.
Nonagria edelsteni, Tutt, Ent. Rec. xx. p. 164 (1908).

♂. Head and thorax pale greyish olive, the prothoracic crest tipped with white; abdomen pale greyish olive irrorated with fuscous. Fore wing greyish olive slightly irrorated with fuscous; a diffused fascia of blackish irroration along median nervure from base to beyond angle of cell where it is more prominent, the veins of inner half irrorated with white; antemedial line represented by slight black points on the veins; two slight black points in upper part of cell towards extremity; reniform with its upper part slightly defined by black points, its lower with white points before and beyond it; a postmedial series of black points, excurved from costa to vein 4, then oblique; a terminal series of small black

lunules. Hind wing pale olive-grey suffused with fuscous; cilia paler. Underside of both wings pale ochreous irrorated with brown, no discoidal spots; fore wing with the disk suffused with brown; hind wing with diffused curved postmedial line.

Ab. 1. *edelsteni*. Brownish ochreous, the thorax tinged with rufous.—Britain, Sussex; Germany, Mecklenburg.

Hab. Britain; Germany, 1 ♂, Zeller Coll.; Austria, Vienna, 1 ♂, 1 ♀; Transylvania; S. Sweden. *Exp.* 30 millim.

Larva. Kirby, Butt. & Moths Eur. p. 163, pl. 28. f. 19; Hffm. Raup. p. 104. Bluish grey; dorsal and subdorsal stripes yellow; four black tubercles on each somite; head dark brown. Food-plant, *Phragmites communis*. 6.

4705. Archanara polita. (Plate CXLIII. fig. 26.)

Nonagria polita, Wlk. xxxii. 629 (1865).
Archanara noncgriella, Wlk. xxxv. 1737 (1866).

♂. Head and thorax rufous tinged with fuscous; abdomen pale rufous irrorated with fuscous. Fore wing greyish rufous irrorated with black, the veins with faint pale streaks; two black points on median nervure near base; antemedial line represented by black points on the veins; a slight black streak in cell above base of vein 2; a slight whitish spot at lower angle of cell with two black points on its inner edge and two on outer, a slight pale streak beyond it above vein 5; a postmedial series of black points on the veins, excurved from costa to vein 4, then oblique; a terminal series of black points. Hind wing pale rufous with slight dark irroration; a terminal series of dark points from apex to vein 2; the underside with postmedial series of minute dark streaks on the veins.

Hab. Japan, Yokohama (*Pryer*), 1 ♀; C. China, Shanghai, 2 ♂ type and type *nonogriella*. *Exp.* 34–38 millim.

*4706. Archanara phragmiticola.

Nonagria phragmiticola, Staud. Rom. Mém. vi. p. 469, pl. 9. f. 2 (1892); id. Cat. Lep. pal. p. 188.

♀. Head, thorax, and abdomen grey-brown. Fore wing grey-brown; a short white streak on extremity of median nervure, a black point at lower angle of cell followed by a white point with two white points beyond it; traces of a pale subterminal line; a subterminal series of dark striæ. Hind wing grey-brown.

Hab. E. Siberia, Amurland, Sutschan. *Exp.* 30–36 millim. This species is unknown to me.

4707. Archanara sparganii.

Noctua sparganii, Esp. Schmett. iv. pl. 148. ff. 2, 3 (1790); Hübn. Eur. Schmett., Noct. ff. 549–50; Frr. Neue Beitr. pl. 88; Dup. Lép. Fr. vii. pt. i. p. 92, pl. 106. ff. 6, 7; Herr.-Schäff. Eur. Schmett., Noct. ff. 352–3; Staud. Cat. Lep. pal. p. 187.

Head, thorax, and abdomen greyish ochreous suffused with fuscous. Fore wing greyish ochreous tinged with rufous and slightly irrorated with black; the median nervure and veins arising from it and vein 1 with faint pale streaks; a faint dark streak at base of median nervure; orbicular represented by a black point just above median nervure, the reniform by a small crescentic mark at lower angle of cell; a postmedial series of indistinct dark points on the veins excurved from costa to vein 4, then oblique; traces of a subterminal line defined by slight dark suffusion beyond it, excurved below vein 7 and at middle; a terminal series of prominent black points; cilia whitish at tips. Hind wing ochreous tinged with rufous; some fuscous suffusion on the veins at and beyond angles of cell; a terminal series of dark points from apex to vein 2; cilia whitish; the underside whitish tinged with rufous, the costal area slightly irrorated with brown.

Ab. 1. Paler greyish ochreous without rufous tinge.

Ab. 2. Much more strongly suffused with rufous; hind wing suffused with black except terminal area.

Hab. Britain, Leech Coll.; France, Sand and Leech Colls.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary, Frey Coll.; Switzerland; N. Italy; Sweden; S. Russia. *Exp.* 38–46 millim.

Larva. Meyr. Lep. Brit. p. 111; Barrett, Brit. Lep. v. p. 82, pl. 194. f. 2.

Slender; pale yellow-green; subdorsal and lateral lines darker; head and thoracic plate pale brown. Food-plants, in stems or bases of leaves of *Iris pseudacorus*, *Sparganium*, and *Typha*. 7–8. *Pupa* usually with head upwards.

4708. Archanara ærata. (Plate CXLIII. fig. 7.)

Leucania ærata, Butl. A. M. N. H. (5) i. p. 80 (1878).

Nonagria strigosa, Staud. Rom. Mém. vi. p. 468 (1892); id. Cat. Lep. pal. p. 187.

Head and thorax red-brown mixed with ochreous; abdomen ochreous tinged with red-brown. Fore wing brassy yellow irrorated with red-brown; dark brown streaks on base of subcostal nervure, on median nervure to end of cell, and on base of vein 1; orbicular represented by a dark brown point, the reniform slightly defined by brown scales; postmedial line represented by a series of black points excurved from costa to vein 4, then oblique, met at discal fold by an oblique dark shade from termen below apex; a terminal series of small black-brown spots. Hind wing ochreous

yellow slightly tinged with brown; a terminal series of brown striæ from apex to vein 2; the underside ochreous yellow, the costal area slightly irrorated with brown.

Hab. E. Siberia, Amurland, 1 ♂, Ussuri; Japan, Hakodaté, 1 ♀ type. *Exp.* ♂ 36, ♀ 46 millim.

4709. Archanara oblonga. (Plate CXLIII. fig. 28.)

Nonagria oblonga, Grote, Papilio, ii. p. 96 (1882); Smith, Cat. Noct. N. Am. p. 182.
Nonagria permagna, Grote, Papilio, iii. p. 73 (1883); Smith, Cat. Noct. N. Am. p. 182.
Nonagria subcarnea, Kellicott, Can. Ent. xv. p. 175 (1883); Smith, Cat. Noct. N. Am. p. 182.

Head and thorax greyish ochreous tinged with rufous; abdomen whitish ochreous tinged with rufous and slightly irrorated with fuscous. Fore wing pale ochreous tinged with rufous and irrorated with fuscous; the median nervure with slight dark streak; the orbicular represented by a black point, the reniform by a slight dark point at lower angle of cell; an indistinct postmedial series of black points excurved from costa to vein 4, then oblique; a terminal series of black points. Hind wing pale ochreous tinged with rufous, the disk suffused with brown; traces of a curved postmedial line; a terminal series of black points from apex to vein 2; the underside whitish tinged with rufous and slightly irrorated with brown, a slight discoidal point, points beyond upper and lower angles of cell, and subterminal series.

Hab. U.S.A., Maine, Kittery Point, New York, 1 ♀, Buffalo, Florida, Indian R.; Jamaica, Runaway Bay (*Walsingham*), 1 ♂. *Exp.* ♂ 44, ♀ 52 millim.

Larva. Head brown, shining. Body slender, cylindrical, brown, the skin finely wrinkly; spiracles on joint 12 large, directed laterally, normal. Food-plant, *Typha*.—H. G. D.

4710. Archanara subflava. (Plate CXLIII. fig. 29.)

Nonagria subflava, Grote, Papilio, ii. p. 95 (1882); Smith, Cat. Noct. N. Am. p. 182.

♀. Head and thorax ochreous tinged with rufous especially on the tegulæ; antennæ with the shaft whitish; pectus and abdomen whitish. Fore wing ochreous tinged with rufous and slightly irrorated with brown; median nervure with dark streak, a rather elongate black spot at lower angle of cell; antemedial line represented by black points on the veins, the postmedial line by a prominent series of black points on the veins, excurved from costa to vein 4, then oblique; subterminal line defined by dark irroration beyond it and streaks on the veins, excurved below costa and at middle. Hind wing white faintly tinged with ochreous; the

underside with the costal area slightly irrorated with brown, postmedial dark points on veins 8 to 6.

Hab. Canada, Manitoba, Aweme (*Criddle*), 1 ♀; U.S.A., Maine, Massachusetts, Wisconsin, 1 ♀, Illinois, S. Dakota, Volga, 1 ♀. *Exp.* 36–44 millim.

4711. Archanara alameda. (Plate CXLIII. fig. 30.)

Nonagria alameda, Smith, Proc. Ent. Soc. Wash. v. p. 318 (1903).

♂. Head and thorax dull red-brown with a fuscous tinge; abdomen more ochreous. Fore wing dull red-brown suffused with dark brown, the veins slightly streaked with black; antemedial line obsolete; orbicular obsolete; reniform scarcely traceable: postmedial line represented by a series of black points; a slight dark terminal line and and a fine pale line at base of cilia. Hind wing ochreous tinged with fuscous; the underside ochreous tinged and irrorated with fuscous, a dark postmedial line.

♀. More ochreous, fore wing with the antemedial line sometimes traceable, erect, waved; postmedial points large and defined by some white scales; the reniform with ochreous centre, indistinctly defined; hind wing yellowish with an indistinct postmedial line.

Hab. U.S.A., California, Alameda Co., 1 ♀. *Exp.* ♂ 32–37, ♀ 37–39 millim.

4712. Archanara algæ.

Noctua algæ, Esp. Schmett. iv. pl. 140. ff. 1, 2 (1789).
Noctua arundinis, Hübn. Eur. Schmett., Noct. ff. 386–7 (1808), nec Fabr.
Nonagria cannæ, Ochs. Schmett. Eur. iv. p. 82 (1816); Dup. Lép. Fr. vii. pt. 1, p. 87, pl. 106. f. 3, and Suppl. iii. p. 361, pl. 33. f. 2; Herr.-Schäff. Eur. Schmett., Noct. ff. 354–5; Staud. Cat. Lep. pal. p. 187.
Nonagria russa, Ev. Bull. Mosc. 1847, iii. p. 79.

Head and thorax bright rufous; fore legs browner above; abdomen ochreous suffused with brown. Fore wing bright rufous slightly irrorated with fuscous; the veins with slight dark streaks, the median nervure with stronger fuscous streak; a dark point at lower angle of cell; a postmedial series of black points on the veins excurved from costa to vein 4, then oblique; subterminal line faintly defined by fuscous suffusion beyond it, excurved below vein 7 and at middle; a strigiform black terminal line. Hind wing rufous suffused with fuscous brown, the cilia rufous; the underside pale rufous suffused and irrorated with brown, traces of a curved postmedial line.

Ab. 1. Pale brownish ochreous slightly tinged with rufous.

Hab. Britain, Leech Coll.; France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary; Switzerland; N. Italy; Sweden; Russia, Livonia, Sarepta. *Exp.* 30–44 millim.

Larva. Meyr. Brit. Lep. p. 111; Barrett, Lep. Brit. v. p. 79, pl. 194. f. 1. Greenish; tubercles black; head brownish; thoracic plate greenish white. Food-plant, in stems of *Typha latifolia*. 5-6. *Pupa.* Usually with head upwards.

*4713. Archanara læta. (Plate CXLIII. fig. 31.)

Nonagria læta, Morr. Proc. Bost. Soc. N. H. xviii. p. 120 (1875); Smith, Cat. Noct. N. Am. p. 182.

♀. Head and thorax bright rufous; antennæ ochreous white; abdomen ochreous suffused with rufous. Fore wing bright rufous slightly irrorated with brown, the costal area redder, the veins streaked with brown except vein 1; a diffused dark mark at lower angle of cell. Hind wing ochreous suffused with purplish pink and slightly irrorated with brown; the underside ochreous, the costal area suffused with purplish pink and slightly irrorated with brown.

Hab. U.S.A., New Jersey, Hoboken, New York, Plattsburg (*Hudson*), in U.S. Nat. Mus. *Exp.* 44 millim.

Genus CŒNOBIA.

Type.

Cœnobia, Steph. Cat. Brit. Lep. p. 121 (1856), non descr.; Wlk. ix. 118 (1856) ..... *rufa*

Proboscis fully developed; palpi porrect, extending about the length of head, the 2nd joint moderately fringed with hair below, the 3rd moderate; frons with pointed triangular corneous plate at middle with flattened plate below it and tuft of hair above; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales and without crests; build slender; tibiæ moderately fringed with hair; abdomen elongate, without crests. Fore wing with the apex rounded, the termen slightly excised below apex and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

4714. Cœnobia rufa.

Phytometra rufa, Haw. Lep. Brit. p. 260 (1809); Steph. Ill. Brit. Ent., Haust. iii. p. 123; Staud. Cat. Lep. pal. p. 188.

Nonagria despecta, Treit. Eur. Schmett. (v.) ii. p. 311 (1825); Geyer, Eur. Schmett., Noct. ff. 751–2 (1833); Dup. Lép. Fr., Suppl. iii. p. 355, pl. 32. f. 5; Herr.-Schäff. Eur. Schmett., Noct. f. 365.

Acosmetia lineola, Steph. Ill. Brit. Ent., Haust. iii. p. 123 (1829).

Head and thorax pale ochreous tinged with rufous; palpi and sides of frons tinged with fuscous; tibiæ and tarsi fuscous, the

Fig. 124.—*Cœnobia rufa*, ♂. ½.

latter ringed with white; abdomen ochreous white. Fore wing pale ochreous slightly tinged with rufous and irrorated with brown

especially on the veins; antemedial line represented by slight black points on the veins; a small blackish spot at lower angle of cell; a postmedial series of black points on the veins, excurved from costa to vein 4, then oblique: cilia brownish ochreous with a slight dark line through them. Hind wing white irrorated with brown, the termen tinged with brown; a curved punctiform postmedial line from costa to vein 2 and fine dark terminal line from apex to vein 2; the underside white, the costal and terminal areas irrorated with brown, a discoidal point and indistinct curved postmedial line.

Ab. 1. Fore wing dark rufous; hind wing suffused with fuscous. —Dorsetshire (*Bankes*).

Hab. Britain, Leech and Frey Colls.; France: Denmark: Germany, Zeller, Frey, and Leech Colls.; Austria. *Exp.* 24–26 millim.

Larva. Barrett, Lep. Brit. v. p. 94, pl. 196. f. 2.

Slender; dorsally pale red, ventrally whitish; four dark dorsal tubercles on each somite; lateral line fine, blackish; head and thoracic plate shining brown. Food-plant in stems of *Juncus lamprocarpus*. 5–6.

Genus **HYPOCŒNA**, nov.

Type, *H. rufostriga*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with rough hair only and without crests; build slender; tibiæ fringed with long hair; abdomen with some rough hair at base but without crests. Fore wing long and narrow, the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

4715. Hypocœna rufostriga.

Leucania rufostriga, Pack. Proc. Bost. Soc. N. H. xi. p. 36 (1866); Smith, Cat. Noct. N. Am. p. 186.

Caradrina punctivena, Smith, Trans. Am. Ent. Soc. xxi. p. 77, pl. v. f. 12 (1894).

♂. Head and thorax greyish ochreous suffused with rufous; palpi, lower part of frons, pectus, and legs suffused with fuscous; abdomen greyish tinged with rufous and irrorated with fuscous. Fore wing ochreous suffused and irrorated with rufous, the veins whitish irrorated with black; a slight black streak above base of vein 1; a diffused dark streak along median nervure from before middle to middle of termen; antemedial line represented by a black point on vein 1; orbicular and reniform absent; postmedial line represented by a double curved series of black points on the veins; subterminal line absent; a terminal series of slight black lunules; cilia intersected by pale streaks. Hind wing greyish

ochreous irrorated and suffused with brown especially on the veins, the cilia paler; the underside irrorated with brown except the cell and inner area.

Fig. 125.—*Hypocœna rufostriga*, ♂. ½.

Hab. Labrador, Caribou I.; Canada, Manitoba, Winnipeg, 1 ♂, Alberta, Calgary (*Wolley-Dod*), 8 ♂, Red Deer R. (*Wolley-Dod*), 1 ♂; U.S.A., 1 ♂, Colorado. *Exp.* 28–32 millim.

Genus **MICROLITA**, nov.

Type, *M. leucorhabda*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint moderately fringed with hair, the 3rd short; frons with pointed conical prominence; eyes large, round; antennæ of female ciliated; thorax clothed almost entirely with scales and without crests; build slight; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a small areole; 11 from cell. Hind wing with veins 3, 4 and 6, 7 strongly stalked; 5 obsolescent from middle of discocellulars; 8 anastomosing with the cell to middle.

*4716. Microlita leucorhabda.

Doryodes leucorhabda, D. Jones, Trans. Ent. Soc. 1908, p. 165.

♀. Head white; palpi, sides of frons, and antennæ fuscous brown; thorax ochreous yellow with a few brown scales; legs tinged with fuscous; abdomen ochreous white tinged with fuscous. Fore wing ochreous yellow slightly irrorated with black; a slight

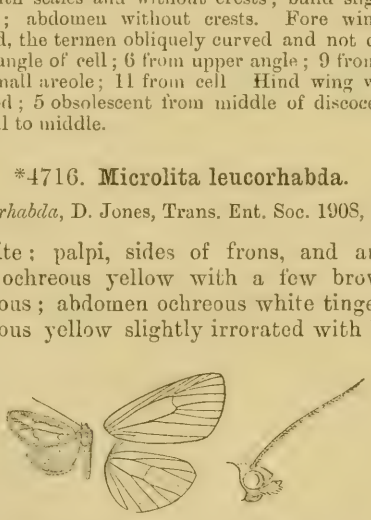


Fig. 126.—*Microlita leucorhabda*, ♀. ½.

white streak in submedian fold from base to termen; a white fascia in lower part of cell with less well-defined oblique white fascia from it to apex; a subbasal black point below the cell; antemedial line almost obsolete except in submedian interspace where it is excurved, oblique towards costa and slightly angled

inwards on vein 1; the medial area with slight black streak above the white fascia in cell dilated at extremity into a small discoidal spot; postmedial line almost obsolete on costal area, strongly angled outwards below costa, oblique to the discoidal point, then minutely waved and incurved in submedian interspace; a diffused oblique brown fascia below the white fascia from apex; some slight dark streaks in interspaces of terminal area; a terminal series of black striæ. Hind wing brownish white; the terminal area suffused with brown; an indistinct discoidal spot, curved postmedial line, and fine terminal line; the underside with the costal area irrorated with brown, a dark discoidal spot, and diffused curved postmedial line.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 22 millim.

Genus **AMPHILITA**, nov.

Type, *A. punctilinea.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth; eyes large, round; antennæ of female ciliated; thorax clothed almost entirely with scales and without crests; build slender; tibiæ slightly fringed with hair, the spurs long; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with curved white fascia from base through the cell to apex ..... *arcuata.*
B. Fore wing without curved white fascia ..... *punctilinea.*

*4717. Amphilita arcuata.

Parvapenna arcuata, D. Jones, Trans. Ent. Soc. 1908, p. 165.

♀. Head and thorax bright rufous; pectus and legs whitish tinged with brown; abdomen red-brown with white bands, the ventral surface whitish irrorated with brown. Fore wing bright rufous irrorated with black-brown, the veins streaked with black-brown;

Fig. 127.—*Amphilita arcuata*, ♀. ½.

a white fascia from base along median nervure and from lower angle of cell obliquely to apex; a faint double antemedial line from the white fascia to inner margin; a slight dark spot in middle of cell and discoidal lunule; postmedial line very indistinct on costal half,

very oblique from costa to vein 7, then inwardly oblique, below the white fascia strong and with faint line beyond it; the interspaces of terminal area with slight brown streaks; a fine brown terminal line; cilia whitish with black lines at middle and tips. Hind wing white, the terminal area suffused with reddish brown narrowing to tornus; cilia white with a slight brown line through them; the underside with the costal and terminal areas irrorated with brown, an indistinct discoidal spot and somewhat diffused curved post-medial line.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 24 millim.

*4718. **Amphilita punctilinea.** (Plate CXLIII. fig. 32.)

Parvapenna punctilinea, D. Jones, Trans. Ent. Soc. 1908, p. 165.

♀. Head and thorax ochreous yellow with a few brown scales; palpi fuscous at sides; tarsi banded with fuscous; abdomen pale ochreous. Fore wing ochreous yellow sparsely irrorated with fuscous; subbasal line represented by black points below costa and on median nervure; a faint curved antemedial line with black points on costa and the veins, slightly incurved at vein 1; black points at origin of vein 2 and lower angle of cell; a postmedial series of black points on the veins, oblique from costa to vein 4, then incurved; a terminal series of black striæ; cilia ochreous mixed with fuscous and with a fine dark line near base. Hind wing ochreous white, the terminal half suffused with brownish ochreous; an indistinct dark discoidal spot; cilia ochreous at base, white at tips; the underside whitish irrorated with brown, the costa ochreous towards base, a dark discoidal spot, traces of a post-medial line from costa to vein 3 and terminal series of striæ.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 22 millim.

Genus **ACYLITA**, nov.

Type, *A. sanguifusa*.

Proboscis aborted, slight; palpi upturned, slender, the 2nd joint reaching about to middle of frons, the 3rd short; frons smooth; eyes large, round; antennæ of male laminate and minutely ciliated; thorax smoothly clothed with hair and scales and without crests; tibiæ slightly fringed with hair, the spurs very long; build slender; abdomen without crests. Fore wing long and narrow, the apex produced and acute, the termen evenly curved and not crenulate; vein 3 from well before angle of cell; 5 from above angle; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; a fringe of long hair from below base of costa on underside; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell to near extremity.

A. Fore wing more or less strongly tinged with pink.
  a. Fore wing with rufous fascia from base to apex defined by white streaks ..... *cara.*
  b. Fore wing without rufous fascia.
    a^1. Fore wing suffused with pale pink and with slight dark shades from base to apex and on inner area ..... *elongata.*

b^1. Fore wing suffused with deep pink.
a^2. Fore wing with deep pink fascia through the cell from base to apex ..... *sanguifusa*.
b^2. Fore wing without dark fascia, with slight white streaks on median nervure and base of veins arising from it ..... *ducinfieldi*.
B. Fore wing brownish ochreous.
a. Fore wing with black points in middle of cell and on discocellulars ..... *disticta*.
b. Fore wing with black discoidal point only ..... *monosticta*.

4719. Acylita cara. (Plate CXLIV. fig. 1.)

Doryodes cara, Schaus, Trans. Am. Ent. Soc. xxi. p. 235 (1894).

♀. Head, thorax, and abdomen white slightly tinged with rufous; fore legs brownish. Fore wing white irrorated with crimson; a bright rufous fascia from close to base through the cell to apex narrowing to points at extremities and defined above and below by white streaks; a slight oblique red fascia from termen just below apex to vein 1 beyond middle; a fine red terminal line. Hind wing white very faintly tinged with brown; the underside irrorated with crimson, strongly on costal area.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♀. *Exp.* 28 millim.

4720. Acylita elongata. (Plate CXLIV. fig. 2.)

Doryodes elongata, Schaus, Proc. U.S. Nat. Mus. xxx. p. 109 (1906).

♀. Head and thorax white suffused with brown; palpi pale yellow tinged with red at sides; pectus and legs ochreous tinged with brown; abdomen ochreous slightly irrorated with brown. Fore wing white suffused with pink especially on inner and terminal areas and slightly irrorated with brown; the costal edge white; the veins of terminal area slightly streaked with white; a faint brown fascia from base through the cell and thence obliquely to termen just below apex; a dark point in middle of cell; a terminal series of minute dark points. Hind wing white very faintly tinged with brown; the underside with the costa faintly tinged with pink and slightly irrorated with brown.

Hab. Brazil, São Paulo (*D. Jones*), 2 ♀. *Exp.* 34 millim.

*4721. Acylita sanguifusa. (Plate CXLIV. fig. 3.)

Doryodes sanguifusa, D. Jones, Trans. Ent. Soc. 1908, p. 165.

♂. Head and thorax ochreous suffused with rufous; pectus whitish; legs brown; abdomen white slightly irrorated with brown. Fore wing whitish suffused with bright pink; a deep pink fascia in cell and thence obliquely to apex; the inner area deep pink; the terminal area with deep pink streaks in the interspaces. Hind wing white, the terminal area faintly irrorated with ochreous; the underside with the costal area suffused with ochreous.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 26 millim.

4722. Acylita ducinfieldi.

Doryodes dukinfieldi, Schaus, Trans. Am. Ent. Soc. xxi. p. 235 (1894).

♀. Head and thorax ochreous suffused with red-brown: abdomen ochreous. Fore wing bright pink; the costal edge ochreous;

Fig. 128.—*Acylita ducinfieldi*, ♀. ½.

a slight white streak on median nervure and bases of veins arising from it. Hind wing white very faintly tinged with brown.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♀. *Exp.* 30 millim.

*4723. Acylita disticta. (Plate CXLIV. fig. 4.)

Doryodes disticta, D. Jones, Trans. Ent. Soc. 1908, p. 164.

♂. Head and thorax brownish ochreous; pectus and hind legs whitish, fore and mid legs and hind tarsi at extremity fuscous brown; abdomen white tinged with ochreous and slightly irrorated with fuscous. Fore wing brownish ochreous sparsely irrorated with black; black points in middle of cell and on discocellulars; slight fuscous points above and below submedian fold just beyond middle; a faint diffused oblique fuscous streak from apex to just beyond discoidal point and a diffused oblique subterminal line from below apex to submedian fold; a terminal series of black points. Hind wing white suffused with ochreous except on inner area; cilia white; the underside white, the costal area suffused with ochreous and slightly irrorated with brown.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 26 millim.

*4724. Acylita monosticta. (Plate CXLIV. fig. 5.)

Doryodes monosticta, D. Jones, Trans. Ent. Soc. 1908, p. 164.

♂. Head and thorax brownish ochreous; pectus white; legs brownish ochreous; abdomen white tinged with ochreous and slightly irrorated with fuscous. Fore wing brownish ochreous faintly tinged with red and very slightly irrorated with brown; a black discoidal point; traces of an oblique diffused red fascia from apex to discocellulars. Hind wing white suffused with ochreous; the underside white, the costal area suffused with ochreous.

Hab. Brazil, Castro Paraña, type † in Coll. D. Jones. *Exp.* 24 millim.

Genus **NEOLITA**, nov.

Type, *N. perstriata.*

Proboscis aborted, small; palpi porrect, extending about twice the length of head and broadly fringed with hair above and below; frons smooth with tuft of hair; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed and without crests; build slender; tibiæ smoothly scaled; abdomen without crests. Fore wing narrow, the apex produced, the termen obliquely curved and not crenulate; vein 3 from well before angle of cell; 5 from above angle; 6 from below upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 stalked; 5 obsolescent from middle of discocellulars; 6, 7 on a long stalk; 8 anastomosing with the cell to near middle.

4725. **Neolita perstriata**, n. sp.

♂. Head, thorax, and abdomen ochreous white; palpi tinged with rufous and with slight brown streak at sides; legs tinged with rufous. Fore wing ochreous white slightly tinged with rufous and irrorated with brown, the costal edge brownish; a subbasal black point in cell; traces of a curved antemedial series of black points; a black point in middle of cell and another on discocellulars; a

Fig. 129.—*Neolita perstriata*, ♂. ½.

diffused red-brown fascia from apex to lower angle of cell; a postmedial series of slight black points on the veins, strongly bent outwards below costa, then obliquely curved to inner margin; a terminal series of black points. Hind wing yellowish white; a terminal series of black points from apex to vein 2; the underside with the costal area faintly tinged with rufous.

Hab. Brazil, Rio Janeiro, 2 ♂ type. *Exp.* 22 millim.

Genus **RHYNCHOLITA**, nov.

Type, *R. atripuncta.*

Proboscis aborted, minute; palpi porrect, the 2nd joint extending about three times length of head and fringed with hair above and below, the 3rd moderate; frons smooth, with tuft of hair; eyes large, round; antennæ of male ciliated; thorax clothed with scales and hair mixed and without crests; tibiæ slightly fringed with hair; abdomen without crests. Fore wing narrow, the apex somewhat produced and acute, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from below upper angle; 7, 8, 9 stalked; 10, 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell to near middle.

4726. **Rhyncholita atripuncta**, n. sp.

Head and thorax greyish ochreous slightly tinged with rufous and irrorated with fuscous; abdomen whitish tinged with brown. Fore wing greyish ochreous slightly tinged with rufous and irrorated with fuscous; subbasal line represented by black points on subcostal and median nervures; a curved antemedial series of black points; orbicular and reniform small, black, the former rather elongate elliptical, the latter round; a postmedial series of

Fig. 130.—*Rhyncholita atripuncta*, ♂. ½.

black points, strongly bent outwards below costa, excurved to vein 4, then incurved; a terminal series of black points. Hind wing white with a faint flesh-coloured tinge; a small black discoidal spot, postmedial series of striæ on the veins and terminal series of striæ; the underside with the costal and terminal areas tinged with brownish ochreous.

Ab. 1. Fore wing with the orbicular and reniform with whitish centres and black annuli.

Hab. Brazil, Castro Paraña (*D. Jones*), 1 ♂, 2 ♀ type. *Exp.* 22 millim.

Genus **AMOLITA**.

	Type.
Amolita, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 158 (1874).....	*fessa.*
Parvapenna, Kaye, Trans. Ent. Soc. 1901, p. 129	*sentalis.*

Proboscis aborted, small; palpi upturned, the 2nd joint reaching to vertex of head and moderately fringed with scales in front, the 3rd short; frons smooth; eyes large, round; antennæ of male typically bipectinate with moderate branches to apex; thorax clothed with scales and hair mixed and without crests; build slender; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex slightly produced and acute, the termen evenly curved and not crenulate; vein 3 from well before angle of cell; 5 from above angle; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with moderate branches to apex.

A. Fore wing with brown fascia from base through the cell to apex.
  a. Fore wing white tinged with brown..... *perstriata.*
  b. Fore wing yellow suffused with rufous..... *fessa.*
B. Fore wing with oblique brown band from apex to middle of inner margin.
  a. Fore wing slightly irrorated with black ..... *sentalis.*
  b. Fore wing very strongly irrorated with black..... *irrorata.*

4727. **Amolita perstriata**, n. sp. (Plate CXLIV. fig. 6.)

♀. Head, thorax, and abdomen ochreous white; palpi pale rufous; fore and mid legs and hind tarsi tinged with brown. Fore wing ochreous white sparsely irrorated with black; a faint brownish fascia in cell; two minute black points in upper part of middle of cell and two at upper angle; the interspaces of costal area tinged with brown towards apex; a faint diffused brown fascia from termen below apex to submedian fold where it terminates in a black point; a terminal series of black points. Hind wing white faintly tinged with ochreous. Underside of fore wing and costal area of hind wing tinged with ochreous, the costa and termen of both wings slightly irrorated with brown; both wings with terminal series of black points.

Hab. Bahamas (*Bonhote*), 1 ♀ type. *Exp.* 22 millim.

4728. **Amolita fessa.**

Amolita fessa, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 158 (1874); Smith, Cat. Noct. N. Am. p. 193.

Head, thorax, and abdomen pale ochreous; antennæ more fulvous; fore and mid legs tinged with brown. Fore wing pale ochreous tinged with rufous except on costal area and sparsely irrorated with brown; the costal edge brownish; a diffused brown fascia from close to base along median nervure and thence obliquely to apex; a slight brown fascia along inner margin to beyond middle where it

Fig. 131.—*Amolita fessa*, ♂ ♮.

is met by an oblique brown band from termen below apex formed of rather diffused marks in the interspaces; a black point in middle of cell and another on discocellulars; a terminal series of black points. Hind wing ochreous white slightly irrorated with brown; a terminal series of brown points. Underside of fore wing and costal area of hind wing tinged with ochreous and irrorated with brown.

Hab. U.S.A., Massachusetts, New York (*Burg*), 1 ♂, 2 ♀ type, Distr. of Columbia, Texas, ? Florida. *Exp.* ♂ 28, ♀ 34 millim.

4729. **Amolita sentalis.**

Parvapenna sentalis, Kaye, Trans. Ent. Soc. 1901, p. 129, pl. vi. f. 7.
Amolita obliqua, Smith, Trans. Am. Ent. Soc. xxix. p. 222 (1903).

Head, thorax, and abdomen pale ochreous irrorated with a few

black scales; palpi rufous except at tips; pectus and legs tinged with rufous. Fore wing ochreous yellow faintly tinged with rufous except on costal area and sparsely irrorated with black; a black point in upper part of middle of cell and another at upper angle; an oblique diffused rufous fascia from apex to inner margin before middle and another browner fascia from termen below apex to inner margin beyond middle, formed by rather diffused marks in the interspaces; a terminal series of black points; cilia rufous. Hind wing ochreous white with terminal series of black points from apex to vein 2. Underside of fore wing except inner area and costal area of hind wing ochreous tinged with rufous and irrorated with black; hind wing with black discoidal point.

Ab. 1. Fore wing with the point at end of cell double.

Hab. U.S.A., Florida (*Schaus*), 1 ♂, Enterprise, 2 ♂, Hastings (*Kearfott*), 1 ♂, cotype *obliqua*, Texas, Harris Co., 1 ♂; Panama, Cana Mines (*Tylecote*), 1 ♂ type; Trinidad (*Kaye*, *Urich*), 8 ♂, 1 ♀; Brazil, São Paulo (*D. Jones*), 1 ♂, 3 ♀. *Exp.* ♂ 20–26, ♀ 24–30 millim.

4730. **Amolita irrorata**, n. sp. (Plate CXLIV. fig. 7.)

♂. Head and thorax pale ochreous mixed with brown; palpi slightly tinged with rufous; pectus and legs suffused with brown; abdomen ochreous dorsally suffused with brown, ventrally irrorated with brown. Fore wing pale ochreous slightly tinged with reddish brown and thickly irrorated with black; a black point in middle of cell and another on discocellulars; a diffused oblique black-brown fascia from apex to inner margin before middle and another narrower fascia from termen below apex to inner margin beyond middle; a terminal series of black points; cilia with diffused blackish line through them. Hind wing ochreous white; a terminal series of black points from apex to vein 2; cilia with a faint brown line through them except towards tornus. Underside of fore wing suffused with brown; hind wing with the costal area irrorated with brown, a black discoidal point.

Hab. Paraguay, Sapucay (*Foster*), 5 ♂ type; Argentina, Goya (*Perrins*), 1 ♂. *Exp.* 26–32 millim.

Sect. II. Antennæ of male strongly laminate.

4731. **Amolita roseola.**

Amolita roseola, Smith, Trans. Am. Ent. Soc. xxix. p. 223 (1903).

♂. Head and thorax ochreous white, the vertex of thorax faintly tinged with pink; palpi rufous except at tips; antennæ rufous; pectus and legs rufous; abdomen ochreous white tinged with rufous towards extremity and on ventral surface. Fore wing pale ochreous; the costal area faintly tinged with pink; a faint pinkish fascia through the cell and thence obliquely to apex; a

black point in upper part of middle of cell and two at upper angle; an antemedial black point in submedian fold and a minute streak in middle of fold; a faint oblique pinkish fascia from apex to submedian fold beyond middle; a terminal series of black points.

Fig. 132.—*Amolita roseola*, ♂. ½.

Hind wing yellowish white. Underside of fore wing and costal area of hind wing suffused with bright pink.

Hab. U.S.A., Florida, Hastings (*Kearfott*), 1 ♂ cotype, Texas, Harris Co., 1 ♂. *Exp.* 22 millim.

Sect. III. Antennæ of male ciliated.

4732. **Amolita nyctichroa**, n. sp.

♂. Head and thorax reddish brown tinged with grey; abdomen dorsally grey-brown, ventrally ochreous. Fore wing greyish ochreous almost wholly suffused with dark brown and slightly irrorated with black; a faint diffused brown fascia below median nervure and thence obliquely to apex with a pale fascia above it from middle of cell to apex; blackish points in and beyond lower angle of cell; a curved postmedial series of minute black streaks on

Fig. 133.—*Amolita nyctichroa*, ♂ ½.

the veins; a terminal series of black points; cilia white tinged with ochreous. Hind wing glossy brown; cilia white tinged with ochreous. Underside of fore wing grey irrorated with brown, the disk suffused with brown; hind wing grey irrorated with brown, a faint diffused brown subterminal line, a terminal series of black points from apex to vein 2.

Hab. Uruguay, Colon (*Oldfield Thomas*), 1 ♂ type. *Exp.* 20 millim.

Genus **CILLA.**

Cilla, Grote, N. Am. Ent. i. p. 99 (1880)..... Type. *distema.*

Proboscis aborted, minute; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair above and below towards extremity, the 3rd porrect; frons smooth with tuft of hair; eyes large, round; antennæ of male with cilia and bristles; thorax clothed with scales and hair mixed and without crests; build slender; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4733. Cilla distema.

Cilla distema, Grote, N. Am. Ent. i. p. 99 (1880); Smith, Cat. Noct. N. Am. p. 193.

Head and thorax white; palpi tinged with rufous; frons rufous at sides; fore and mid tibiæ and tarsi tinged with rufous; hind legs and abdomen yellowish white. Fore wing white, the terminal area tinged with yellowish; the veins faintly tinged with brown; small black spots in middle of cell and on discocellulars; an

Fig. 134.—*Cilla distema*, ♂. ½.

obliquely curved postmedial series of brown points on veins 7 to 1; a terminal series of black points; cilia slightly mixed with brown. Hind wing yellowish white. Underside of fore wing except inner area and the hind wing suffused with ochreous yellow.

Ab. 1. Fore wing without the postmedial series of points.

Hab. U.S.A., Texas, 1 ♂, 3 ♀ type. *Exp.* 24–28 millim.

Genus **DANTONA.**

Dantona, Wlk. xix. 1021 (1859)..... Type. *stillata.*

Proboscis aborted, minute; palpi obliquely upturned, the 2nd joint reaching to about middle of frons and fringed with scales in front, produced to a point at extremity with the rather long porrect 3rd joint resting on it; frons smooth with sharp tuft of hair; eyes large, round; antennæ of male with long bristles and cilia; thorax clothed chiefly with scales and without crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rectangular, the termen evenly curved and not crenulate; veins 3 and 5

from near angle of cell ; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars ; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4734. Dantona stillata.

Nonagria stillata, Guen. Noct. i. p. 107 (1852).
Nonagria discerpta, Wlk. xi. 712 (1857).
Laphygma punctifinis, Wlk. xi. 721 (1857).
Laphygma congressa, Wlk. xv. 1677 (1858).
Dantona busalis, Wlk. xix. 1021 (1859).
Nonagria inferna, Schaus, Pr. U.S. Nat. Mus. xxx. p. 101 (1906).

♂. Head and thorax fuscous black mixed with some grey ; palpi whitish at tips ; antennæ whitish ; pectus and legs greyer ; abdomen whitish tinged with brown. Fore wing fuscous brown suffused with glossy grey and slightly irrorated with black ; a black streak below base of cell ; a black point in middle of cell and a slight black discoidal lunule with white point at lower angle of cell with short black streak before it above median nervure ; post-medial line represented by a series of small dentate black marks, oblique from costa before apex to submedian fold, then bent inwards above inner margin ; a terminal series of small black lunules. Hind wing white tinged with reddish brown at apex or almost entirely suffused with brown ; a fine dark terminal line ;

Fig. 135.—*Dantona stillata*, ♂. ½.

cilia white tinged with brown at apex ; the underside with the costal area suffused with reddish brown, the terminal area irrorated with brown.

♀. Hind wing entirely suffused with fuscous brown.

Ab. 1. *punctifinis*. Head, thorax, and fore wing much browner and less fuscous.

Ab. 2. Fore wing with whitish streak in discal fold from orbicular to postmedial line ; hind wing more uniformly suffused with brown in male.

Ab. 3. *inferna*. Fore wing with slight black streak in discal fold from orbicular to postmedial line and with the black streak in lower end of cell ; hind wing of male brownish white.

Hab. Brazil, 1 ♂, type *discerpta*, Petropolis (*Doer*), 1 ♂, Rio Janeiro (*Wilson*), 12 ♂, 1 ♀, Organ Mts., Tijuca (*Wagner*), 1 ♂, 1 ♀, Castro Paraña (*D. Jones*), type † ♂ *inferna* in Coll. U.S. Nat. Mus. ; Paraguay, Sapucay (*Foster*), 1 ♂ ; Argentina, Gran Chaco (*Wagner*), 1 ♀, Sta Fé (*Wagner*), 1 ♀ ; hab. ignotus, 1 ♂, type *punctifinis*. *Exp.* 30–38 millim.

Genus ACRAPEX.

	Type.
Acrapex, Hmpsn. Moths Ind. ii. p. 286 (1894)	*prisca*.
Acutipenna, Hmpsn. Moths Ind. ii. p. 287 (1894)	*acuminata*.

Proboscis aborted, minute; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd short; frons smooth; eyes large, round; antennæ of male typically ciliated; thorax clothed with rough hair and hair-like scales and without crests; build slender; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex produced and acute, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle or areole; 9 from 10 anastomosing with 8 to form the areole; 7 often from beyond the areole; 11 from cell. Hind wing with veins 3, 4 usually shortly stalked; 5 obsolescent from below middle of discocellulars or from or from near lower angle of cell; 6, 7 stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male biserrate and fasciculate.

4735. Acrapex exanimis.

Caradrina exanimis, Meyr. Faun. Hawaii. i. p. 153 (1899).
Acrapex exsanguis, Lower, P. Linn. Soc. N.S.W. xxvi. p. 655 (1902).

Head and thorax white slightly mixed with brownish ochreous; palpi brown above; antennæ ochreous; abdomen white tinged with ochreous. Fore wing white tinged with reddish ochreous leaving fine white streaks on the veins; a white fascia in discal fold from before middle of cell to termen; a whitish fascia in submedian

Fig. 136.—*Acrapex exanimis*, ♂. ½.

fold; a fine rufous terminal line; cilia white with a faint brownish line at middle. Hind wing pure white; the underside with the costal area tinged with ochreous.

Hab. Queensland, Kuranda (*Dodd*), 1 ♀, Brisbane (*Turner*), 2 ♂, 2 ♀, Mackay, type † ♂ *exsanguis* in Coll. Lower; Hawaii, Kona (*Perkins*), 1 ♀ type. *Exp.* 26–32 millim.

Sect. II. Antennæ of male with quadrate uniserrations.

4736. Acrapex curvata.

Acrapex curvata, Hmpsn. Ann. S. Afr. Mus. ii. p. 306 (1902).

Head and thorax ochreous white mixed with rufous; abdomen ochreous white. Fore wing pale ochreous, the costal area suffused

with rufous leaving the veins and costal edge white, the inner area irrorated with red-brown; a white fascia above median nervure from near base, curved upwards beyond the cell to apex, with some dark suffusion before it on costa and an oblique dark fascia below it from termen below apex to vein 3; the upper discocellular defined by two minute black striæ; a fine black terminal line; cilia

Fig. 137.—*Acrapex curvata*, ♂. ½.

yellowish white with a faint rufous line through them. Hind wing nearly pure white with a slight brown terminal line; the underside with the costal area tinged with ochreous and slightly irrorated with brown.

Hab. Br. E. Africa, Tana R. (*Crawshay*), 1 ♂, Muani (*Betton*), 1 ♀ type; Matabeleland, Gwelo R. (*Oates*). *Exp.* 26 millim.

Sect. III. (*Acutipenna*). Antennæ of male annulate and ciliated.

4737. Acrapex acuminata.

Acutipenna acuminata, Hmpsn. Moths Ind. ii. p. 287 (1894).

♂. Head and thorax ochreous mixed with brown; palpi, frons, pectus in front, and fore legs dark brown; abdomen ochreous white. Fore wing pale ochreous slightly tinged with red-brown, the costa browner, the veins of costal area with slight pale streaks; a rather diffused brown fascia along median nervure to beyond end of cell where it meets an oblique brown fascia from termen below

Fig. 138.—*Acrapex acuminata*, ♂. ½

apex with a diffused pale fascia above it from apex; a white fascia in discal fold from middle of cell to the oblique subterminal fascia; a fine brown terminal line; cilia white with fine brown line at middle, mixed with brown at tips. Hind wing pure white; the underside with the costal area irrorated with brown.

Hab. Madras, Nilgiris (*Hampson*), 2 ♂ type. *Exp.* 22–26 millim.

Sect. IV. (*Acrapex*). Antennæ of male ciliated and not annulated.

A. Fore wing with more or less developed oblique dark shade from termen below apex.
  a. Fore wing with white streak on median nervure expanding at extremity ..... *rhabdoneura*.
  b. Fore wing without white streak on median nervure expanding at extremity.
    a^1. Fore wing with hooked white mark above median nervure in lower extremity of cell ..... *hamulifera*.
    b^1. Fore wing without hooked white mark above median nervure.
      a^2. Hind wing fuscous black.
        a^3. Fore wing nearly uniform deep rufous ..... *metaphæa*.
        b^3. Fore wing paler with dark shade along median nervure expanding towards termen ..... *spoliata*.
      b^2. Hind wing pale, usually more or less strongly tinged with fuscous.
        a^3. Fore wing with dark shade along median nervure.
          a^4. Fore wing with the veins of costal area defined by slight dark streaks.
            a^5. Fore wing with pale streaks on the veins of costal area only..... *brunnea*.
            b^5. Fore wing with pale streaks on all the veins.
              a^6. Head and tegulæ black.
                a^7. Patagia black ..... *albivena*.
                b^7. Patagia pale..... *atriceps*.
              b^6. Head and tegulæ not black.
                a^7. Fore wing ochreous white tinged with fuscous brown ..... *leucophlebia*.
                b^7. Fore wing pale pinkish rufous ..... *prisca*.
          b^4. Fore wing with the veins of costal area not defined by dark streaks ..... *carnea*.
        b^3. Fore wing without dark shade along median nervure ..... *roseotincta*.
B. Fore wing without oblique dark shade from termen below apex ..... *ænigma*.

4738. **Acrapex rhabdoneura**, n. sp. (Plate CXLIV. fig. 8.)

Head, thorax, and abdomen pale ochreous slightly tinged with rufous; palpi dark brown. Fore wing pale ochreous slightly irrorated with brown; the costal edge and interspaces of costal area suffused with reddish brown; a diffused red-brown fascia in and below cell to near termen where it meets an oblique brown fascia from termen below apex to vein 2 with a pale oblique fascia before it from apex; a white streak on extremity of median nervure slightly hooked on discocellulars; the veins beyond the cell streaked with white to the subterminal fascia; a fine red-brown terminal line; cilia brown mixed with ochreous. Hind wing pure white; the underside with the costal area tinged with ochreous.

Hab. Br. E. Africa, Eb Urru (*Betton*), 2 ♂, 1 ♀ type, Mukuniu (*Betton*), 1 ♀. *Exp.* 22–26 millim.

4739. Acrapex hamulifera.

Meliana hamulifera, Hmpsn. Ill. Het. B. M. ix. p. 91, pl. 161. f. 5 (1893); id. Moths Ind. ii. p. 286.

Head and thorax ochreous, the head and tegulæ slightly mixed with rufous; abdomen ochreous. Fore wing ochreous, the costal and inner areas slightly irrorated with brown, the cell and area below it to submedian fold from base to the oblique subterminal line and apex thickly irrorated with brown and black leaving a whitish streak on median nervure and thence obliquely to apex, giving off a slight hook on discocellulars; small very ill-defined black spots at middle of cell and in submedian fold; traces of an oblique postmedial series of black points between veins 7 and 1; an indistinct diffused oblique subterminal line from termen below apex to inner margin; a terminal series of small black lunules. Hind wing pale ochreous suffused with brown; cilia whitish; the underside ochreous white irrorated with brown, a brown discoidal spot, indistinct rather diffused oblique postmedial line, and terminal series of striæ.

Hab. Ceylon, Newera Eliya (*Green*), 1 ♂ type, Dickoya (*Green*), 1 ♀. *Exp.* 36 millim.

4740. Acrapex metaphæa, n. sp. (Plate CXLIV. fig. 9.)

♂. Head and thorax ochreous tinged with rufous and mixed with some black-brown; palpi dark brown; abdomen dorsally dark brown, ventrally ochreous tinged with rufous. Fore wing rufous, the costal area, median nervure and veins arising from it, and inner margin suffused with dark brown, slight white points in and beyond lower angle of cell; traces of a subterminal series of black points, a slight oblique dark shade from termen below apex; a terminal series of black points. Hind wing dark reddish brown, the cilia with fine pale line at base; the underside greyish suffused and irrorated with fuscous.

Hab. Mashonaland, Salisbury (*Marshall, Dobbie*), 2 ♂ type; Transvaal (*Pead*), 1 ♂. *Exp.* 26 millim.

4741. Acrapex spoliata. (Plate CXLIV. fig. 10.)

Nephopteryx spoliata, Wlk. xxvii. 63 (1863).

♂. Head and thorax ochreous tinged with rufous and mixed with some dark brown; palpi with the 2nd joint brown at sides; abdomen dorsally dark brown, ventrally ochreous tinged with rufous. Fore wing ochreous tinged with rufous, the costal area suffused with dark brown leaving slight pale streaks on the veins; the median nervure and base of veins arising from it streaked with black-brown; a black-brown streak in and beyond lower angle of cell with white points on it before and beyond the angle; a diffused oblique black-brown shade from termen below apex to vein 3; a

terminal series of slight black lunules; cilia dark brown mixed with ochreous. Hind wing red-brown; cilia whitish at tips: the underside grey suffused with fuscous, traces of a dark discoidal spot and diffused curved postmedial line.

Hab. Sierra Leone (*Morgan*), 1 ♂ type; Uganda, Ketoma (*Doggett*), 1 ♂, Mulema (*Doggett*), 1 ♂; Mashonaland, Salisbury (*Marshall*), 4 ♂. *Exp.* 22–24 millim.

4742. **Acrapex brunnea**, n. sp. (Plate CXLIV. fig. 11.)

Acrapex leucophlebia, Hmpsn. Ann. S. Afr. Mus. ii. p. 306 (1902), part.

Head and thorax dark brown slightly mixed with ochreous; thorax ochreous tinged with rufous; pectus and legs ochreous mixed with brown; abdomen ochreous suffused with brown. Fore wing ochreous, the costal area suffused with red-brown leaving slight pale streaks on the veins; a diffused brown streak along median nervure and thence to the subterminal oblique fascia, with two white points on it at lower angle of cell; a slight brown streak below base of cell; an oblique pale fascia from apex to discal fold with a diffused dark brown fascia below it from termen below apex to vein 3 with minute black streaks on it in the interspaces; a terminal series of slight black lunules; cilia ochreous mixed with brown and with brown line near base. Hind wing ochreous white, the veins and terminal area tinged with brown; a fine brown terminal line; cilia whitish with a slight brown line near base; the underside whitish with the costal and terminal areas irrorated with reddish brown.

Ab. 1. Hind wing more uniformly tinged with brown.

Ab. 2. Fore wing without the white points at lower angle of cell.

Hab. Br. E. Africa, Nairobi (*Betton*), 3 ♂, Machakos (*Crawshay*), 5 ♂ type; Uganda, Karasa (*Betton*), 1 ♂, Mulema (*Doggett*), 1 ♂, Ketoma (*Doggett*), 2 ♂; Mashonaland, Salisbury (*Marshall*), 1 ♂; Gazaland, Mt. Chirinda (*Marshall*), 1 ♂; Transvaal (*Pead*), 1 ♂, (*Jansé*), 1 ♂; Natal, Karkloof (*Marshall*), 1 ♂, Estcourt (*Hutchinson*), 3 ♂, 1 ♀, Durban (*Bowker*, *Gooch*), 2 ♂; Ceylon, Maskeliya (*de Mowbray*), 1 ♂; Borneo, Pulo Laut (*Doherty*), 2 ♀; Br. N. Guinea, Owgarra (*Meek*); Queensland, Gayndah, 1 ♀; S. Australia (*Arnold*), 1 ♂. *Exp.* 20–30 millim.

4743. **Acrapex albivena**, n. sp. (Plate CXLIV. fig. 12.)

♂. Head and thorax black-brown mixed with some ochreous; tarsi with slight pale rings; abdomen pale ochreous mixed with brown. Fore wing ochreous whitish suffused and irrorated with black-brown leaving whitish streaks on the veins; a whitish streak in discal fold from near base to near termen, then bent upwards to apex; a diffused rufous fascia above vein 1; a terminal series of

slight black points; cilia whitish at base, blackish at tips. Hind wing whitish suffused with fuscous brown; the underside whitish irrorated with brown.

Hab. C. Colony, Transkei (*Miss F. Barrett*), 1 ♂ type. *Exp.* 38 millim.

4744. **Acrapex atriceps**, n. sp. (Plate CXLIV. fig. 13.)

♂. Head and tegulæ black; thorax ochreous tinged with rufous, with a black dorsal stripe; pectus and legs dark brown, the hind tibiæ and tarsi ochreous above; abdomen ochreous. Fore wing pale ochreous slightly tinged with rufous, the veins defined by brown streaks except on inner area beyond the oblique subapical fascia, the costal edge black-brown; a diffused brown mark at lower angle of cell with white points in and beyond the angle defined by some black scales; an oblique brown fascia from termen below apex to vein 3 where it is diffused inwards to lower angle of cell; a terminal series of black striæ; cilia with black line at middle and mixed with black at tips. Hind wing ochreous white slightly tinged with red-brown; cilia ochreous white with a faint brown line at middle; the underside whitish slightly irrorated with brown, the costal area suffused with brown.

Hab. Assam, Khásis, 1 ♂ type. *Exp.* 26 millim.

4745. **Acrapex leucophlebia.** (Plate CXLIV. fig. 14.)

Acrapex leucophlebia, Hmpsn. Moths Ind. ii. p. 287 (1894).

Head and thorax ochreous mixed with brown; abdomen ochreous white slightly irrorated with brown. Fore wing ochreous white irrorated with red-brown, the veins defined by slight brown streaks except on inner area; a slight brown streak below basal half of cell; the discocellulars with some brown points before and beyond them; a diffused oblique whitish fascia from apex to discal fold with a brown shade below it from termen below apex, with short brown streaks on its inner edge above and below vein 5; a terminal series of minute black lunules; cilia whitish at base, dark at tips. Hind wing ochreous white tinged with reddish brown except on costal area; cilia ochreous white; the underside ochreous white slightly tinged with red-brown.

Hab. Madras, Nilgiris (*Hampson*), 2 ♂ type; Travancore, Pirmád (*Mrs. Imray*), 1 ♂. *Exp.* 26–32 millim.

4746. **Acrapex prisca.**

Leucania prisca, Wlk. xxxv. 1953 (1866); Hmpsn. Moths Ind. ii. p. 286.
Senta cramboides, Moore, Lep. Ceyl. iii. p. 12, pl. 145. f. 6 (1884).

Head and tegulæ rufous mixed with dark brown; thorax ochreous tinged with rufous; pectus and legs ochreous mixed with

brown; abdomen brownish ochreous. Fore wing pale purplish rufous, the veins defined by slight brown streaks except on inner area; a slight diffused brown mark at lower angle of cell; an oblique postmedial series of slight dark points on veins 4 to 1; a faint oblique brownish fascia from termen below apex to vein 4;

Fig. 139.—*Acrapex prisca*, ♂. ½.

a terminal series of black points; cilia with brown line at middle and tips. Hind wing yellowish white slightly tinged with brown; cilia yellowish white with faint brown line at middle.

Ab. 1. Fore and hind wings much more suffused with brown.

Hab. Travancore, Pirmád (*Imray*), 1 ♀; Ceylon, 3 ♀ type and type *cramboides*, Pundaloya (*Green*), 3 ♀, Hakgalla (*Green*), 2 ♂. *Exp.* 30–38 millim.

4747. **Acrapex carnea.** (Plate CXLIV. fig. 15.)

Acrapex carnea, Hmpsn. Ann. S. Afr. Mus. iii. p. 427 (1905).

♂. Head and thorax brown slightly mixed with ochreous; thorax ochreous tinged with rufous; pectus, legs, and abdomen ochreous suffused with brown. Fore wing ochreous tinged with rufous; a brown streak on median nervure except at base; slight black streaks in and beyond lower angle of cell and a point at upper angle; a whitish fascia in terminal half of cell and thence obliquely curved to apex; traces of an oblique postmedial series of dark points on veins 4 to 1; a brown shade from termen below apex with very slight dark streaks on its inner edge above and below vein 5; traces of a terminal series of black points; cilia white tinged with brown and with faint brown line at middle. Hind wing whitish suffused with brown, paler at base; cilia white tinged with brown and with faint brown line near base; the underside whitish suffused with fuscous brown.

Hab. Basutoland, Mackacha, 10,000′ (*Crawshay*), 2 ♂ type. *Exp.* 28–30 millim.

4748. **Acrapex roseotincta**, n. sp. (Plate CXLIV. fig. 16.)

♀. Head and thorax ochreous tinged with brown; abdomen ochreous white. Fore wing pale ochreous yellow faintly tinged with rufous and the veins slightly streaked with rufous; a slight blackish streak below basal half of cell; some black scales at lower angle of cell; an oblique postmedial series of black points on

veins 6 to 1; an oblique diffused rufous fascia from termen below apex to vein 3; a slight brown terminal line; cilia yellowish white with a faint brownish line through them. Hind wing white faintly tinged with ochreous; the underside white with the costal area tinged with ochreous.

Hab. Ceylon, Maskeliya (*Pole*), 1 ♀ type. *Exp.* 22 millim.

4749. Acrapex ænigma.

Epimecia ænigma, Feld. Reis. Nov. pl. 108. f. 47 (1874).

Head ochreous white; thorax pale pink; pectus and legs yellowish white; abdomen white, the ventral surface yellowish. Fore wing pale pink; the costal edge white; a white streak in discal fold from middle of cell to before termen at vein 5; a white streak in basal half of submedian fold; the veins of terminal half slightly streaked with white. Hind wing pure white; the underside with the costal area faintly tinged with pink.

Hab. Natal, Colenso (*Janse*), 1 ♂; Basutoland, Masite (*Crawshay*), 1 ♂; C. Colony, Annshaw (*Miss F. Barrett*), 1 ♂, 2 ♀. *Exp.* 24–28 millim.

Genus **NONAGRIA**.

	Type.
Nonagria, Ochs. Schmett. Eur. iv. p. 82 (1816), non descr.; Treit. Schmett. Eur. v. (2) p. 309 (1825)	*maritima*.
Chilodes, Herr.-Schäff. Eur. Schmett. ii. p. 226 (1845)	*maritima*.

Proboscis aborted, small; palpi obliquely upturned, slender, the 2nd joint reaching about to middle of frons, moderately fringed with hair in front, the 3rd moderate; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, the pro- and metathorax with small spreading crests; build slender; tibiæ moderately fringed with hair; abdomen long, with lateral fringes of hair but without crests. Fore wing narrow and elongate, the apex somewhat produced and acute, the termen oblique from vein 3 to tornus, not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Fore wing with the veins of costal area streaked with white... *maritima*.
B. Fore wing with the veins dark defined by slight pale streaks..... *enervata*.

4750. Nonagria maritima.

Noctua maritima, Tausch. Mém. Mosc. 1811, i. p. 178, pl. 13. f. 5; Staud, Cat. Lep. pal. p. 188.
Tortrix bipunctana, Haw. Trans. Ent. Soc. i. p. 337 (1812).
Noctua ulvæ, Hübn. Eur. Schmett., Noct. ff. 635-6 & 666-8 (1818) Herr.-Schäff. Eur Schmett., Noct. f. 397.
Melia sericea, Curt. Brit. Ent. vi. p. 201 (1828); Steph. Ill. Brit. Ent Haust. iv. p. 298.

Ilythia anella, Steph. Ill. Brit. Ent., Haust. iv. p. 297 (1834).
Senta nigromaculata, Schmidt, Stett. ent. Zeit. 1858, p. 361.
Senta wismariensis, Schmidt. Stett. ent. Zeit. 1858, p. 361 ; Herr.-Schäff. Neue Schmett, p. 11, f. 73.
Senta nigrocostata, Staud. Cat. Lep. Eur. p. 107 (1871).
Senta nigristriata, Staud. Cat. Lep. Eur. p. 107 (1871).

Head and thorax rufous tinged with grey ; pectus and legs ochreous white mixed with brown, the tarsi brown with pale rings ; abdomen ochreous white. Fore wing pale rufous, the veins, costal and inner areas irrorated with whitish and brown, the veins of costal area paler, the discal fold redder ; a subbasal black and white point in cell ; antemedial line represented by slight black points on the veins ; orbicular with its centre defined by black and white annulus interrupted at sides, round ; reniform defined by black and white points on inner side, very indistinctly defined on outer ; postmedial line represented by a series of black points on

Fig. 140.—*Nonagria maritima*, ♂. ½.

the veins, oblique below vein 4 ; traces of a subterminal line slightly excurved below vein 7 and at middle and bent outwards to tornus ; a terminal series of black points. Hind wing ochreous white with minute postmedial black streaks on veins 4 to 2 and terminal series of striæ from apex to vein 2 ; the underside with the costal and terminal areas irrorated with brown, a black discoidal spot, postmedial series of points on the veins and terminal series of small lunules from apex to vein 2.

Ab. 1. *nigristriata*. Fore wing with the interspaces of costal half streaked with black.

Ab. 2. *bipunctana*. Fore wing with the orbicular and reniform filled in with black.

Ab. 3. *vismariensis*. Fore wing with broad diffused black fascia in and below cell from base to subterminal line.

Ab. 4. *nigricostata*. Fore wing with the costal area broadly black.—Pomerania.

Hab. Britain ; France, Sand Coll. ; Holland ; Denmark ; Germany, Zeller, Frey, and Leech Colls. ; Austria ; Hungary ; Russia. *Exp.* 28–38 millim.

Larva. Meyr. Brit. Lep. p. 124 ; Barrett, Lep. Brit. v. p. 98, pl. 196. f. 3.
Ochreous with fine darker lines. Food-plant, on leaves and in stems of *Phragmites*. 9–4.

4751. Nonagria enervata. (Plate CXLIV. fig. 17.)

Nonagria enervata, Guen. Noct. i. p. 105 (1852); Smith, Cat. Noct. N. Am. p. 183.
Nonagria fodiens, Guen. Noct. i. p. 105 (1852).

♂. Head and thorax reddish brown suffused with grey; palpi and legs fuscous brown; abdomen grey tinged with red. Fore wing reddish brown suffused with grey; a diffused blackish streak below base of cell; antemedial line represented by faint black points on the veins, the reniform by a blackish mark at lower angle of cell, the postmedial line by a series of faint black points on the veins, oblique below vein 4; a terminal series of slight black points. Hind wing whitish tinged with red-brown.

♀. Fore wing paler reddish, a somewhat browner fascia along median nervure, the veins of terminal half with slight dark streaks; the antemedial line more distinct, excurved in interspaces and angled inwards on the veins; reniform with black spots in upper and lower parts; postmedial series of points double and distinct, strongly bent inwards to costa; terminal series of points distinct; hind wing whiter with indistinct diffused curved postmedial line; the underside with small discoidal spots.

Hab. U.S.A., Florida (*Doubleday*), 3 ♂, 2 ♀ type. *Exp.* 28–34 millim.

Genus DOERRIESA.

	Type.
Ragonotia, Staud. Iris, xii. p. 372 (1899), nec Grote, Lep. 1888	*striata.*
Doerriesa, Staud. Iris, xii. p. 373 (1899).....	*striata.*

Proboscis aborted, minute; palpi upturned, the 2nd joint reaching to above vertex of head and fringed with scales in front and behind at extremity, the 3rd moderate; frons smooth; eyes large, round; antennæ of female ciliated; thorax clothed almost entirely with scales and without crests; build slender; tibiæ slightly fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex produced and acute, the termen nearly straight and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle 8 anastomosing with the cell to middle.

4752. Doerriesa striata.

Ragonotia striata, Staud. Iris, xii. p. 372, pl. 6. f. 15 (1899); id. Cat. Lep. pal. p. 188.

♀. Head white; palpi purplish red; thorax white suffused with purplish red; abdomen ochreous white. Fore wing purplish red; the costal edge white; the cell streaked with ochreous white leaving a forked red streak in discal fold; the submedian interspace with ochreous white fascia, the fold defined by fine double

red streaks: an indistinct pale streak on inner margin; the veins and interspaces beyond the cell streaked with ochreous white with broader fascia above vein 4; cilia brown at base, pure white at tips.

Fig. 141.—*Doerriesa striata*, ♀. ½.

Hind wing ochreous white; the underside with the costal area slightly tinged with red and irrorated with brown towards apex, some brown irroration on terminal area to vein 2.

Hab. E. Siberia, Amurland, 1 ♀, Ussuri. *Exp.* 36 millim.

Genus **SESAMIA**.

	Type.
Sesamia, Guen. Noct. i. p. 95 (1852)	*vuteria*.
Microsemyra, Butl. P. Z. S. 1883, p. 155	*pallida*.

Proboscis aborted, minute; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd short; frons smooth with tuft of hair; eyes large, round; antennæ of male typically bipectinate with rather short branches to apex; thorax clothed with hair only and without crests; tibiæ fringed with rather long hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell or stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or stalked; 8 anastomosing with the cell near base only.

Sect. I. (*Sesamia*). Antennæ of male bipectinate to apex with rather short branches.

A. Fore wing with dark terminal line.
  a. Fore wing ochreous tinged with rufous and with slight dark irroration ..... *vuteria*.
  b. Fore wing ochreous not tinged with rufous and strongly irrorated with black ..... *calamistis*.
B. Fore wing with terminal series of black points ..... *coniota*.

4753. Sesamia vuteria.

Phalena vuteria Stoll, Suppl. Cram. Pap. Exot. v. p. 161, pl. 36. f. 5 (1783).
Cossus nonagrioides, Lef. Ann. Soc. Linn. Paris, vi. p. 98, pl. 5 (1827); Staud. Cat. Lep. pal. p. 190.
Nonagria hesperica, Rmbr. Faun. And. pl. 18. ff. 1–3 (1839); Dup. Lép. Fr., Suppl. iii. p. 470, pl. 41. f. 2; Herr.-Schäff. Eur. Schmett. ii. p. 237, Noct. ff. 344–5.
Leucania incerta, Wlk. ix. 103 (1856).

Nonagria sacchari, Wllstn. A. M. N. H. (3) i. p. 117 (1858); Beth.-Baker, Trans. Ent. Soc. 1891, p. 209, pl. 12. f. 4.
Sesamia madagascariensis, Saalm. Lep. Madag. p. 262 (1891).

Head and thorax ochreous tinged with rufous; palpi fuscous above; abdomen ochreous white. Fore wing ochreous suffused with rufous, the extremity of median nervure with faint diffused brownish streak with a faint ochreous point on it at lower angle of cell; usually with slight antemedial point in submedian fold and curved postmedial series of points on the veins with other points before it in discal and submedian folds; a slight brown

Fig. 142.—*Sesamia vuteria*, ♂. ½.

terminal line; cilia ochreous white with two slight brown lines through them. Hind wing pure white; the underside with the costal area faintly tinged with rufous and irrorated with brown.

Hab. S.E. France; Spain, Zeller and Leech Colls.; Centr. Italy; Algeria, Biskra (*Mrs. Nicholl*, *Walsingham*), 2 ♀; Morocco, Tangier, 1 ♂, Leech Coll.; Madeira (*Wollaston*), 1 ♂ type *sacchari*, Funchal (*S. S. Flower*), 1 ♂; Canaries (*Marsden*), 2 ♀; Congo Boma (*Christy*), 1 ♀; Mashonaland, Salisbury (*Marshall*), 1 ♀; Natal (*Gooch*), 1 ♀; C. Colony (*Sir A. Smith*), 1 ♀ type *incerta*; Madagascar; Bourbon. *Exp.* 34–42 millim.

Larva. Kirby, Butt. & Moths Eur. p. 165; Hffm. Raup. p. 105.

Reddish above, yellowish below. Foot-plants, in stalks of Maize Corn, Reed, Sugar-cane, &c. 6.

4754. **Sesamia calamistis**, n. sp. (Plate CXLIV. fig. 18.)

Head and thorax pale ochreous mixed with brown especially on tegulæ; palpi browner; abdomen white slightly tinged with brown. Fore wing pale ochreous irrorated with black-brown; an antemedial black point in submedian fold; a black discoidal point and a point in discal fold beyond the cell with slight ochreous streak between them; a postmedial series of black points on the veins, excurved to vein 4, then oblique, with a point in submedian fold nearer base; a rather punctiform black-brown terminal line not quite reaching apex and with faint brown shade before it; cilia pale ochreous with slight brown lines at middle and near tips. Hind wing pure white; the underside with the costal area slightly tinged with ochreous and irrorated with brown.

Hab. C. Colony, Grahamstown, 1 ♂, 1 ♀ type, Stellenbosch, 1 ♀. *Exp.* 36 millim.

4755. Sesamia coniota. (Plate CXLIV. fig. 19.)

Sesamia coniota, Hmpsn. Ann S. Afr. Mus. ii. p. 297 (1902).

Head and thorax ochreous white with a faint rufous tinge; palpi fuscous, pale at tips; fore legs above, the spurs of mid and hind tibiæ and the extremities of tarsi tinged with fuscous; abdomen ochreous white. Fore wing pale ochreous with a faint rufous tinge and sparsely irrorated with black; an antemedial black point in submedian fold; traces of a black discoidal point; a curved postmedial series of black points on the veins, ending with a point nearer base in submedian fold; a terminal series of black points. Hind wing pure white; the underside with the costal area tinged with ochreous.

Hab. Mashonaland, Salisbury (*Marshall*, *Dobbie*), 4 ♂, 1 ♀ type; C. Colony, Annshaw (*Miss F. Barrett*), 1 ♂. *Exp.* 18–24 millim.

Sect. II. Antennæ of male bipectinate with extremely short branches, the apex serrate.

A. (*Microsemyra*). Hind wing with veins 3, 4 strongly stalked in male, from cell in female.

4756. Sesamia pallida.

Microsemyra pallida, Butl. P. Z. S. 1883, p. 155; Hmpsn. Moths Ind. ii. p. 286.

Head and thorax ochreous white; palpi tinged with fuscous above;

Fig. 143.—*Sesamia pallida*, ♂. ½.

abdomen white. Fore wing ochreous white irrorated with a few fuscous scales; an antemedial black point in submedian fold; traces of an obliquely curved postmedial series of points on the veins with more prominent black points before them in discal and submedian folds; a terminal series of slight black points; cilia with a slight dark line near base. Hind wing pure white; the underside with the costal area slightly tinged with ochreous.

Hab. Bombay, Mhow (*Swinhoe*), 1 ♂, 1 ♀ type. *Exp.* ♂ 22, ♀ 24 millim.

B. Hind wing with veins 3, 4 from cell in both sexes.
- *a*. Fore wing with ante- and postmedial dentate lines ..... *rubritincta*.
- *b*. Fore wing without ante- and postmedial lines.
  - a^1. Fore wing with the costal area white ..... *albicostata*.
  - b^1. Fore wing with the costal area not white ..... *inferens*.

4757. Sesamia rubritincta. (Plate CXLIV. fig. 20.)

Sesamia rubritincta, Hmpsn. Ann. S. Afr. Mus. ii. p. 442 (1902).

♂. Head and thorax ochreous suffused with fiery red especially on patagia and prothorax; palpi, frons, pectus, and fore and mid legs fiery red; abdomen ochreous tinged with fiery red especially at extremity and on ventral surface. Fore wing pale ochreous, the extremity of median nervure and veins of terminal half slightly streaked with brownish; traces of a brownish subbasal line angled outwards below costa and ending at submedian fold; a diffused antemedial pale fiery red patch below the cell; antemedial line fiery red, minutely dentate, excurved to median nervure, then curved inwards to base at vein 1, with red streak from it above and below submedian fold to the postmedial line; some fiery red suffusion in and beyond end of cell with a small ochreous discoidal spot on it; postmedial line fiery red, somewhat diffused and dentate, excurved below costa, then oblique and angled inwards in submedian fold; terminal area suffused with fiery red; a diffused fuscous black subterminal line with rather dentate outer edge, narrowing to apex and ending below vein 3; a strigiform brown terminal line; cilia pale ochreous slightly tinged with red. Hind wing white, the costal and inner areas, veins and cilia tinged with ochreous; the underside with the costa tinged with red and with faint red postmedial bar from costa to vein 7.

Hab. Basutoland, Maseru (*Wroughton*), 1 ♂ type. *Exp.* 46 millim.

*4758. Sesamia albicostata. (Plate CXLIV. fig. 21.)

Sesamia albicostata, Lower, Tr. R. Soc. S. Austr. xxix. p. 175 (1905).

♂. Head and thorax pale ochreous; abdomen white. Fore wing pale ochreous slightly irrorated with fuscous, some black scales in submedian fold; the costal area white. Hind wing pure white.

Hab. Victoria, Ocean Grange, type † ♂ in Coll. Lower. *Exp.* 30 millim.

4759. Sesamia inferens.

Leucania inferens, Wlk. ix. 105 (1856); Moore, Lep. Ceyl. iii. p. 8, pl. 145 f. 3; Hmpsn. Moths Ind. ii. p. 284.
Leucania proscripta, Wlk. ix. 106 (1856).
Sesamia albiciliata, Snell. Tijd. v. Ent. xxiii. p. 44, pl. 4. f. 3 (1880).
Sesamia tranquilaris, Butl. P. Z. S. 1880, p. 674.
Nonagria gracilis, Butl. P. Z. S. 1880, p. 675.
Nonagria innocens, Butl. Trans. Ent. Soc. 1881, p. 173.

Head and thorax brownish ochreous; abdomen white tinged with ochreous. Fore wing ochreous with a faint rufous tinge; a diffused

rufous shade along median nervure and thence to termen between veins 5 and 3; sometimes with antemedial dark point in submedian fold and postmedial series of dark points on the veins with points before them in discal and submedian folds; a fine brown terminal line; cilia ochreous white. Hind wing pure white; the underside with the costal area tinged with ochreous.

Fig. 144.—*Sesamia inferens*, ♂. ½.

Hab. Japan, Yokohama (*Pryer*), 1 ♂, 2 ♀ type *innocens*, Tsushima (*Seebohm*), 1 ♀; Centr. China, Ningpo (*Leech*), 1 ♂, Ichang (*Mrs. Pratt*), 1 ♀; W. China, Chia-kou-ho (*Pratt*), 1 ♀; Formosa (*Hobson*), 1 ♂, 2 ♀, types *tranquilaris* and *gracilis*; Bengal, Cawnpur (*Betton*), 2 ♂, Fatehpur (*Betton*), 1 ♀; Assam, 1 ♀; Madras, Coimbatore (*Walhouse*), 1 ♀; Ceylon (*Templeton, Green*), 3 ♀ type, Puttalam (*Pole*), 1 ♀; Burma, Moulmein (*Clerk*), 1 ♀ type *proscripta*, Rangoon (*Scott*), 1 ♂, 2 ♀, Irrawaddy R., Sheemagar (*Carpenter*), 1 ♀; Andamans, 1 ♀; Penang (*Flower*), 1 ♀; Singapore (*Ridley*), 1 ♂, 1 ♀; Borneo, Sarawak (*Wallace*), 1 ♂, Kuching (*Shelford*), 1 ♂; Philippines, Taytai (*Betton*), 3 ♀; Celebes. *Exp.* 24–34 millim.

Larva. Indian Museum Notes, v. p. 178, pl. xii. f. 9.

Cylindrical, tapering rather suddenly to head and less so to anal somite; smooth, shining, flesh-coloured, with a few colourless bristles; the segments broadly and shallowly pitted; head ferruginous, the mouth-parts black; spiracles black; dorsal vessel dark. Food-plant: Sugar-cane, in the stem of which it bores.

Sect. III. Antennæ of male serrate and fasciculate.

A. Hind wing with veins 3, 4 stalked in both sexes.

4760. Sesamia sabulosa, n. sp.

Head, thorax, and abdomen white slightly mixed with brown. Fore wing ochreous white irrorated with reddish brown; traces of antemedial dark points on costa, median nervure, and vein 1; a slight brownish shade in lower angle of cell and below and beyond the angle; a postmedial series of blackish points on the veins, excurved from costa to vein 4, then oblique; a diffused brownish patch on costa towards apex and an oblique shade from termen at vein 6 to vein 4; a terminal series of dark striæ; cilia white mixed with brown and with brown line through them. Hind

wing ochreous white faintly tinged with brown: the underside with the costal and terminal areas irrorated with reddish brown, a small brown discoidal spot.

Fig. 145.—*Sesamia sabulosa*, ♂. ½.

Hab. Uganda, Mulema (*Doggett*), 2 ♂ type, Ketoma (*Doggett*), 1 ♀. *Exp.* 20 millim.

B. Hind wing with veins 3, 4 from cell.
a. Fore wing suffused with rufous ..... *rufescens*.
b. Fore wing not suffused with rufous ..... *epunctifera*.

4761. Sesamia rufescens, n. sp. (Plate CXLIV. fig. 22.)

Head and thorax ochreous tinged with bright rufous; palpi except at tips and sides of frons blackish; abdomen greyish suffused with dark brown. Fore wing ochreous suffused with bright rufous, especially just below the cell and on inner half of terminal area, the median nervure and veins of terminal area defined on each side by dark streaks; cilia black-brown. Hind wing whitish tinged with brown.

Hab. Natal, Durban (*Leigh*, *Clark*), 4 ♂, 1 ♀ type. *Exp.* 32 millim.

4762. Sesamia epunctifera.

Sesamia epunctifera, Hmpsn. Ann. S. Afr. Mus. ii. p. 298 (1902).

Head and thorax ochreous mixed with dark brown; palpi with the 2nd joint blackish above; abdomen white irrorated with

Fig. 146.—*Sesamia epunctifera*, ♂. ½.

dark brown. Fore wing ochreous white thickly irrorated with black-brown, the veins with pale streaks; usually with black antemedial point in submedian fold, discoidal point and point in discal fold beyond the cell; a terminal series of rather lunulate black points; cilia white mixed with brown and with slight brown line at middle.

Hind wing white, the terminal area sparsely irrorated with dark brown; a terminal series of black-brown striæ from apex to submedian fold; the underside with the costal area sparsely irrorated with dark brown.

Hab. Sudan, White Nile; Br. E. Africa (*Gregory*), 1 ♀, Athi-ya-Mawe (*Betton*), 1 ♀; Natal, Durban (*Leigh*), 2 ♂; Basutoland, Masite (*Crawshay*), 1 ♀; C. Colony, Annshaw (*Miss F. Barrett*), 4 ♂ type. *Exp.* 22–28 millim.

Sect. IV. Antennæ of male with fasciculate cilia.

A. Fore wing suffused with pink.
  a. Fore wing with pale streaks on the veins.
    a^1. Fore wing without black point in lower angle of cell. *tænioleuca*.
    b^1. Fore wing with black point in lower angle of cell ... *albavena*.
  b^1. Fore wing without pale streaks on the veins ..... *tosta*.
B. Fore wing not suffused with pink.
  a^1. Fore wing ochreous slightly tinged with rufous ..... *cretica*.
  b^1. Fore wing ochreous slightly tinged with olive ..... *uniformis*.
  c^1. Fore wing yellowish white irrorated with brown ..... *gracilis*.

4763. Sesamia tænioleuca. (Plate CXLIV. fig. 23.)

Tapinostola tænioleuca, Wllgrn. Svensk. Akad. Handl. v. 4, p. 58 (1866).

♂. Head and thorax purplish pink; palpi brownish; pectus brownish white; abdomen ochreous white suffused with pink. Fore wing purplish pink; costal edge whitish; a white streak in submedian fold from base to just before termen; a white streak in discal fold from middle of cell to just before termen narrowing to points at extremities; cilia brownish with fine white line at base and tinged with pink at tips. Hind wing white, the terminal half tinged with pink; cilia white at base, tinged with pink at tips; the underside with the costal area and terminal half tinged with pink.

Hab. Mashonaland, Salisbury (*Marshall*), 3 ♂; Damaraland, Kuisip; Transvaal (*Pead*), 1 ♂. *Exp.* 42 millim.

4764. Sesamia albavena. (Plate CXLIV. fig. 24.)

Sesamia albavena, Hmpsn. Ann. S. Afr. Mus. ii. p. 297 (1902).

Head and thorax ochreous white slightly tinged with pink; palpi fuscous brown; pectus, legs, and abdomen ochreous white, the fore tibiæ brownish above. Fore wing pale purplish pink, the terminal area darker, the veins slightly streaked with white; a diffused pale fuscous streak above and below median nervure and thence to termen between veins 5 and 4; a black point in lower angle of cell and slight postmedial points in discal and submedian folds; cilia white with diffused brown line near base and fine lines near and at tips. Hind wing pure white; the underside with the costal area suffused with pale pinkish.

Hab. Uganda, Ruwenzori, 1 ♂; Mashonaland, Salisbury (*Marshall, Dobbie*), 7 ♂, 6 ♀ type, Umtali, 2 ♂, 1 ♀, Sebakwe,

1 ♂; Transvaal, White R. (*Cooke*), 1 ♂, Kranspitz (*Janse*), 1 ♂, Gemsbokfontein (*Janse*), 1 ♀; Natal, Estcourt (*Hutchinson*), 1 ♂. *Exp.* 26–34 millim.

*4765. Sesamia tosta.

Sesamia tosta, Snell. Tijd. v. Ent. xv. p. 50, pl. iv. f. 8 (1872).

♀. Head, thorax, and abdomen ochreous tinged with pink. Fore wing ochreous suffused with pink except on costal area. Hind wing white, the termen slightly tinged with yellow.

Hab. Lr. Guinea. *Exp.* 24 millim. This species is unknown to me.

4766. Sesamia cretica.

Leucania hesperica, Frr. Neue Beitr. vi. p. 32, pl. 501, f. 2 (1852), nec Rmbr.
Sesamia cretica, Led. Noct. Eur. p. 225 (1857); Staud. Cat. Lep. pal p. 190.
Nonagria cyrnæa, Mab. Ann. Soc. Ent. Fr. 1866, p. 559, pl. 8. f. 7, & 1867, p. 640, pl. 14. f. 1.
Sesamia fraterna, Moore, Lep. Atk. p. 103 (1882); Hmpsn. Moths Ind. ii. p. 284.
Sesamia striata, Staud. Stett. ent. Zeit. 1888, p. 27.

Head and thorax pale ochreous tinged with rufous; palpi, sides of frons, and fore femora above brownish; abdomen ochreous white. Fore wing pale ochreous tinged with rufous especially on terminal half, the veins with slight pale streaks; faint fuscous streaks above and below extremity of median nervure and beyond the cell,

Fig. 147.—*Sesamia cretica*, ♂. ½.

above and below vein 4; sometimes with slight antemedial dark point in submedian fold and postmedial series of points on the veins with points before them in discal and submedian folds; a fine brown terminal line; cilia ochreous tinged with rufous with fine pale lines at base and middle. Hind wing pure white.

Ab. 1. *striata*. Fore wing with dark streak below base of cell and streaks on the veins of terminal area.—Asia Minor, Syria, W. Turkestan.

Hab. Corsica, Leech Coll.; Centr. Italy; Dalmatia, Frey & Leech Colls.; Crete; Egypt, Dabod (*Wood-Jones*), 1 ♀; Sudan, Khatoum (*Zaphiro*), 1 ♀, Blue Nile (*S. S. Flower*), 1 ♂, Gondokoro (*Reynes-Cole*), 1 ♂, 2 ♀; Basutoland, Masite (*Weigall*), 1 ♂; Aden (*Yerbury, Nurse*), 3 ♂, 1 ♀; Asia Minor, Taurus; Syria,

2 ♀, Leech Coll.; W. Turkestan, Turcomania, Fergana; Punjab, Dharmsála (*Hocking*), 1 ♀ type *fraterna*, Kangra (*Dudgeon*), 1 ♀; Sikhim, 1800′ (*Dudgeon*), 1 ♀. *Exp.* 30–42 millim.

Larva. Kirby, Butt. & Moths Eur. p. 166; Hffm. Raup. p. 105.

Ochreous whitish; head rufous, spiracles black. Food-plant, in stalks of Maize.

4767. **Sesamia uniformis.** (Plate CXLIV. fig. 25).

Nonagria uniformis, Dudgeon, J. Bomb. Soc. xvi. p. 402 (1905).

Head and thorax pale ochreous slightly tinged with brown; palpi fuscous, whitish below; frons tinged with fuscous; fore and mid legs irrorated with fuscous; abdomen ochreous white. Fore wing olive ochreous sparsely irrorated with dark brown; an antemedial black point in submedian fold; a slight diffused fuscous shade on extremity of median nervure and just beyond lower angle of cell; a slight black point in lower angle of cell and another in discal fold just beyond discocellulars; postmedial black points in discal and submedian folds with traces of a curved series of points beyond them on the veins; a fine blackish terminal line not quite reaching apex and tornus; cilia ochreous white with faint brownish lines near base and tips. Hind wing pure white; the underside with the costal area slightly tinged with ochreous and irrorated with brown.

Hab. Bengal, Burogah (*Mackenzie*), 1 ♂, 1 ♀ type, Cawnpur (*Betton*), 1 ♂; Bombay, Surat. *Exp.* ♂ 32, ♀ 34–38 millim.

Larva. Destructive to Sugar-cane.

*4768. **Sesamia gracilis.** (Plate CXLIV. fig. 26.)

Tapinostola gracilis, Rebel, Ann. Naturh. Hofmus. Wien, xiii. p. 365 (1898); Staud. Cat. Lep. pal. p. 189.

♂. Head, thorax, and abdomen white slightly tinged with rufous. Fore wing yellowish white irrorated with brown, the median nervure streaked with brown, the veins of terminal area with pale streaks; cilia white. Hind wing pure white.

Hab. Canaries, Sta. Cruz, type † ♂ in Mus. Vienna. *Exp.* 28 millim.

Genus **ARGYROSPILA.**

Type.

Argyrospila, Herr.-Schäff. Eur. Schmett. ii. p. 374 (1847)..... *succinea.*

Proboscis fully developed; palpi upturned, slender, the 2nd joint hardly reaching to middle of frons and moderately fringed with hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, the prothorax with spreading crest, the metathorax without crest; build slender; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

4769. Argyrospila succinea.

Noctua succinea, Esp. Schmett. iv. 2, p. 37, pl. 190. f. 3 (1796); Staud. Cat. Lep. pal. p. 189.
Leucania maculata, Ev. Faun. Volg. Ur. p. 267 (1844).

Head and thorax white, the latter tinged with ochreous on outer edge and behind; legs tinged with ochreous; abdomen white tinged with ochreous. Fore wing ochreous tinged with rufous; a white streak in base of cell, the base of inner area white; an elliptical

Fig. 148.—*Argyrospila succinea*, ♂. ½.

antemedial white patch in submedian interspace connected with inner margin by an ill-defined line; orbicular white, round; reniform an oblique white lunule with blackish point at lower angle of cell, its upper extremity rather produced, its lower rather dilated on inner side, some whitish above it on costa; an irregular oblique white band from apex to inner margin beyond middle, obscurely forked at apex, tending to form dentate marks on the veins, interrupted at discal fold and dilated on inner area; the veins of terminal area with white streaks intersecting the cilia and becoming shorter towards apex. Hind wing white tinged with ochreous especially on terminal area; cilia white.

Ab. 1. *olivacea*, Bang-Haas, ined. Fore wing much greener.—W. Turkestan.

Hab. Russia, Urals, Zeller Coll.; Armenia, Caucasus, 1 ♀; W. Turkestan, Turcomania, Juldus, 1 ♂, Issyk-Kul; E. Turkestan, Ili. *Exp.* 28-34 millim.

Genus ORIA.

	Type.
Oria, Hübn. Verz. p. 240 (1827)	*musculosa*.
Synia, Dup. Cat. Méth. p. 120 (1844)	*musculosa*.
Tapinostola, Led. Noct. Eur. p. 123 (1857)	*musculosa*.

Proboscis fully developed; palpi obliquely porrect, extending about the length of head, the 2nd joint fringed with long hair below, the 3rd downturned; frons smooth; eyes large, round; antennæ of male typically somewhat laminate and ciliated; thorax clothed with hair only and without crests: tibiæ fringed with long hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with short branches, the apex serrate.

4770. Oria myodea.

Synia myodea, Rmbr. Cat. Lép. S. And. pl. 6. f. 3 (1858); Staud. Cat. Lep. pal. p. 189.

Head and thorax white tinged with pale rufous; abdomen white tinged with ochreous brown. Fore wing pale ochreous brown, the veins with darker streaks, especially the median nervure; an elongate whitish streak in submedian fold representing the claviform, defined on medial area below and at extremity, where it is

Fig. 149.—*Oria myodea*, ♂. ½.

bent up to vein 2, by black scales; a whitish streak in discal fold beyond the cell, narrowing towards termen; cilia with fine whitish line at base and white tips towards tornus. Hind wing white tinged with ochreous brown, the veins with darker streaks; cilia white.

Hab. Spain, Andalusia, Cadiz; Morocco, Tangier (*Leech*), 1 ♂, 1 ♀. *Exp.* 32–36 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing ochreous with whitish fasciæ in discal and submedian folds ..... *musculosa.*
B. Fore wing yellow, the costal area tinged with pink..... *flavescens.*

4771. Oria musculosa.

Noctua musculosa, Hübn. Eur. Schmett., Noct. f. 363 (1808); Dup. Lép. Fr. vii. pt. 1, p. 341, pl. 120. f. 6; Herr.-Schäff. Eur. Schmett., Noct. f. 392; Staud. Cat. Lep. pal. p. 189.
Noctua nervosa, Haw. Lep. Brit. p. 176 (1809), nec Fabr.; Steph. Ill. Brit. Ent., Haust. iii. p. 82.
Leucania flava, Frr. Neue Schmett. iv. p. 142, pl. 370. f. 2 (1846).
Tapinostola frumentalis, Lindemann, Bull. Mosc. 1883, i. p. 145.
Tapinostola læta, Alph. Rom. Mém. v. p. 165 (1889).

Head and thorax white, the latter tinged with ochreous; abdomen white faintly tinged with ochreous. Fore wing pale reddish ochreous; the costal edge white; a slight whitish streak in base of cell; a curved white fascia in submedian interspace; a white fascia in discal fold from end of cell to near termen towards which it narrows and with obliquely placed white marks from its extremity to termen below apex above veins 6 and 7; the interspaces between veins 6 and 2 with wedge-shaped terminal white

marks, smaller above. Hind wing white, the veins tinged with ochreous.

Fig. 150.—*Oria musculosa*, ♂. ½.

Hab. Britain, Leech Coll.; France, Sand Coll.; Denmark; Germany, Zeller and Leech Colls,; Austria; Hungary; Switzerland; Spain; Italy, Capri (*C. S. Browne*); Sicily, Zeller Coll,; Dalmatia; Greece; Algeria; Canaries: Cyprus (*Miss Bate*), 3 ♂; Armenia; Asia Minor; Syria, 2 ♂; Persia, Shahkuh (*Christoph*), 1 ♀. *Exp.* 28–38 millim.

Larva. Kirby, Butt. & Moths Eur. p. 164.

Pale greenish with four dark lines becoming blackish dots at hinder extremity of each segment. Food-plant, in stalks of Rye.

4772. **Oria flavescens.** (Plate CXLIV. fig. 27.)

Sesamia flavescens, Hmpsn. Ann. S. Afr. Mus. ii. p. 298 (1902).

♀. Head and thorax white tinged with ochreous, the patagia slightly with pink; palpi and legs more ochreous; abdomen white tinged with brownish ochreous. Fore wing pale yellow, the costal area faintly tinged with pink, the costal edge white; the median nervure, base of veins arising from it and medial part of vein 1 streaked with whitish and irrorated with a few dark scales; traces of an obliquely curved postmedial series of dark points on veins 6 to 1; cilia whitish. Hind wing white faintly tinged with brown and the terminal area with yellow; the underside pale yellow with slight brown irroration.

Hab. C. Colony, Annshaw (*Miss F. Barrett*), 1 ♀ type. *Exp.* 26 millim.

Genus **XYLOSTOLA**, nov.

Type, *X. indistincta.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about vertex of head and broadly fringed with scales in front, the 3rd long; frons with small rounded prominence covered by a tuft of hair; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales, and without crests; tibiæ fringed with rather long hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rather produced and acute, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with black lunules in centre and on outer edge of reniform ..... *robusta.*
B. Fore wing with the reniform defined by black points.
a. Fore wing with the postmedial line incurved at discal fold. *indistincta.*
b. Fore wing with the postmedial line not incurved at discal fold ..... *olivacea.*

4773. Xylostola robusta. (Plate CXLIV. fig. 28.)

Nonagria robusta, Hmpsn. Moths Ind. ii. p. 285 (1904).

♂. Head and thorax red-brown mixed with some dark brown; palpi black-brown; frons with lateral black bars; pectus and legs dark brown, the hair on tibiæ red-brown; abdomen black-brown, the lateral and anal tufts rufous. Fore wing pale olive-brown tinged with rufous, the terminal area dark brown except at apex; a diffused black fascia below base of cell; traces of a diffused oblique blackish antemedial line; claviform represented by a blackish point at its extremity; orbicular incompletely defined by black and with blackish spot in centre, round; reniform defined by black points and with small black lunules in centre and on outer edge; the extremity of median nervure and the veins beyond the cell slightly streaked with whitish; postmedial line very indistinct, bent outwards below costa, then dentate and produced to black points on the veins, oblique below vein 4; subterminal line pale, defined on inner side by a dark shade at costa and by black suffusion between veins 7 and 1, angled outwards at vein 7, then oblique; a fine black terminal line; cilia rufous with brown lines near base and at middle. Hind wing fuscous brown; cilia rufous with a brown line through them; the underside grey tinged with rufous and thickly irrorated with fuscous especially on costal and terminal areas, a black discoidal lunule and diffused curved postmedial line.

Hab. Sikhim (*Knyvett, Dudgeon, Mowis*), 3 ♂; Assam, Khásis, 1 ♂. *Exp.* 42–52 millim.

4774. Xylostola indistincta.

Vapara indistincta, Moore, Lep. Atk. p. 163 (1882); id. Lep. Ceyl. iii. p. 120, pl. 159. f. 7; Hmpsn. Moths Ind. ii. p. 268.

Head and thorax pale greyish red-brown, the vertex of head and tegulæ bright rufous; pectus and legs whitish mixed with fuscous, the tarsi fuscous ringed with whitish; abdomen greyish suffused with fuscous brown, the ventral surface whitish irrorated with fuscous. Fore wing pale greyish brown tinged with red-brown, especially on postmedial area, and slightly irrorated with black; a black point at base; antemedial line very indistinct, waved; orbicular absent; reniform a faint greyish lunule surrounded by black points; traces of a curved, waved, medial line; postmedial line very indistinct, oblique from costa to vein 6, then waved, slightly incurved at discal fold and oblique below vein 4; sub-

terminal line represented by an oblique series of indistinct pale marks, slightly defined on each side by blackish from costa to discal fold, met by an oblique black streak from apex and slightly excurved at middle; a fine waved black terminal line with black points in the interspaces. Hind wing reddish brown, the cilia

Fig. 151.—*Xylostola indistincta*, ♂. ½.

paler with a brownish line near base; the underside pale greyish, the costal and terminal areas irrorated with dark brown, a dark discoidal lunule, diffused curved postmedial line, and terminal series of small black lunules.

Hab. Sikhim (*Atkinson*, *Lidderdale*), 1 ♂, 1 ♀ type; Madras, Nilgiris (*Hampson*), 2 ♂, 1 ♀; Ceylon, Pundaloya (*Green*), 3 ♂, 2 ♀. *Exp.* 34–44 millim.

4775. Xylostola olivacea.

Xylostola olivacea, Hmpsn. Trans. Zool. Soc. xix. p. 108, pl. iv. f. 16 (1909).

♀. Head and thorax pale red-brown, the vertex of head with a whitish tinge; abdomen whitish tinged with rufous. Fore wing pale red-brown with a slight olive tinge and sparsely irrorated with black, the costal edge and terminal area rather browner; a small subbasal black spot below the cell; antemedial line very indistinct, excurved from below costa to submedian fold, incurved at vein 1; orbicular represented by a few black scales; reniform very incompletely defined by black points; postmedial line very indistinct, oblique from costa to vein 6, then minutely dentate, excurved to vein 4, then oblique; subterminal line indistinct, pale, minutely waved, defined on inner side by a slight brown shade and by small black spots between veins 8 and 4, very slightly excurved at middle; a slight oblique blackish shade from apex; a series of black points just before termen. Hind wing greyish suffused with brown; cilia red-brown with a fine pale line at base; the underside brownish grey slightly irrorated with brown, a small black discoidal spot and terminal series of points.

Hab. Uganda, Ruwenzori, 6000′ (*Wollaston*), 1 ♀ type. *Exp.* 40 millim.

Genus CONICOFRONTIA.

Type.
Conicofrontia, Hmpsn. Ann. S. Afr. Mus. ii. p. 296 (1902) ..... *sesamiodes.*

Proboscis aborted, small; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd short, porrect; frons with pointed conical prominence; eyes large, round; antennæ of male bipectinate with very short branches, serrate towards apex; thorax clothed with hair only and without crests; tibiæ fringed with rather long hair; abdomen elongate, without crests. Fore wing narrow and elongate, the apex produced and acute, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4776. Conicofrontia sesamiodes.

Conicofrontia sesamiodes, Hmpsn. Ann. S. Afr. Mus. ii. p. 296 (1902).

♂. Head, thorax, and abdomen whitish tinged with rufous. Fore wing whitish tinged with rufous and irrorated with fuscous; black points at base below costa and cell; a black point at lower angle of cell and two minute streaks beyond the angle; a postmedial

Fig. 152.—*Conicofrontia sesamiodes*, ♂. ½.

series of slight black points on the veins excurved from costa to vein 4, then oblique. Hind wing white, the veins tinged with ochreous; the underside with the costal area slightly tinged with rufous.

♀. Fore wing with some short subterminal black streaks between veins 6 and 3; hind wing browner.

Hab. Natal, Durban (*Leigh*), 3 ♂; C. Colony, Transkei (*Miss F. Barrett*), 1 ♀ type. *Exp.* ♂ 54, ♀ 38 millim.

Genus ARCILASISA.

Type.
Arcilasisa, Wlk. xxxii. 470 (1865) ..... *sobria.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with rather long hair in front, the 3rd short; frons with rounded prominence; eyes large, round; antennæ of male

serrate and fasciculate; thorax clothed with hair only and without crests; tibiæ fringed with rather long hair; abdomen elongate, without crests. Fore wing rather narrow and elongate, the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a long areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4777. Arcilasisa sobria.

Arcilasisa sobria, Wlk. xxxii. 470 (1867); Hmpsn. Moths Ind. ii. p. 282.

♂. Head and thorax whitish tinged with red-brown; abdomen whitish tinged with red-brown and irrorated with fuscous. Fore wing grey-white tinged with red-brown and sparsely irrorated with

Fig. 153.—*Arcilasisa sobria*, ♂. ½.

black; traces of a subterminal series of wedge-shaped black marks between veins 7 and 2; a terminal series of black points. Hind wing whitish tinged with red-brown especially on terminal area; the underside with black discoidal lunule.

Hab. Punjab, Kulu; Nepal, 1 ♂; Sikhim, 1 ♂; ?S. India. *Exp.* 82 millim.

Genus OMMATOSTOLA.

Type.

Ommatostola, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 112 (1873) ..... *lintneri*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with rather long hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen smoothly scaled and without crests. Fore wing with the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4778. Ommatostola lintneri.

Ommatostola lintneri, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 112 (1873); Smith, Cat. Noct. N. Am. p. 185.

Head and thorax white tinged with reddish ochreous; abdomen white. Fore wing white tinged with reddish ochreous except on costal area; the veins streaked with white and irrorated with fuscous; antemedial line represented by slight black points on the veins; a white streak at lower angle of cell with more prominent black irroration before and beyond it; a postmedial series of black

Fig. 154.—*Ommatostola lintneri*, ♂. ½.

points on the veins, excurved from costa to vein 4, then oblique; cilia pale rufous. Hind wing white, the veins slightly tinged with ochreous; the underside with the costal area faintly tinged with ochreous.

Hab. U.S.A., New York, 1 ♂, 2 ♀ type, New Jersey, Anglesea. *Exp.* 46–50 millim.

Genus CALAMIA.

	Type.
Calamia, Hübn. Verz. p. 240 (1827)	*virens.*
Luceria, Hein. Schmett. Deutsch. i. p. 442 (Oct. 1859), nec Walker, Lep. Nov. (1859)	*virens.*
Zotheca, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 68 (1874)	*tranquilla.*

Proboscis fully developed; palpi oblique, short, fringed with long hair; frons smooth; eyes large, rounded; antennæ of male typically minutely serrate and fasciculate; head and thorax clothed with hair only and without crests; tibiæ moderately fringed with hair, the fore tarsi with the spines strong; abdomen clothed with hair and with lateral fringes of hair but without crests. Fore wing with the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. (*Calamia*). Antennæ of male minutely serrate.

A. Fore wing yellow with rufous patch on medial costal area .... *flavirufa.*
B. Fore wing pale green without rufous patch on costa ..... *virens.*

4779. Calamia flavirufa, n. sp. (Plate CXLIV. fig. 29.)

♀. Head and thorax pale lemon-yellow; palpi rufous irrorated with white; sides of frons and antennæ rufous; pectus and legs rufous irrorated with white; abdomen pale ochreous irrorated

with rufous at extremity, the ventral surface rufous irrorated with white. Fore wing pale lemon-yellow; a rufous patch at base of costa conjoined to a spot below cell, with a rufous streak beyond it on costa; antemedial line greenish grey arising from a small triangular rufous spot on costa, excurved in submedian interspace, then oblique; a large rather oblique rufous patch from middle of costa to lower angle of cell, rounded below, an oblique greenish grey line from it to inner margin; postmedial line greenish grey, arising from a small rufous spot on costa, slightly bent outwards below costa, then minutely waved, oblique below vein 4, the costa beyond it with alternating rufous and white spots; a rufous patch on costa before the minutely waved greenish-grey subterminal line which is slightly excurved below vein 7 and incurved at discal fold; a terminal series of greenish rufous-tinged rather diffused lunules; cilia rufous irrorated with white. Hind wing pale yellow; a pale rufous discoidal spot, diffused rufous postmedial band obsolescent towards costa, and terminal series of rufous lunules; cilia white with rufous line through them except towards tornus; the underside white, the costal area broadly and thickly irrorated with rufous including the indistinct discoidal spot; a rufous postmedial line incurved in submedian interspace, some rufous irroration on termen and spot in submedian interspace.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♀ type; Natal, Stanger (*Delvin*), 1 ♀. *Exp.* 38 millim.

4780. Calamia virens.

Noctua virens, Linn. Syst. Nat. xii. p. 847 (1767); Knock, Beitr. Ins. ii. pl. 1. f. 1; Esp. Schmett. iv. pl. 122. f. 1; Hübn. Eur. Schmett., Noct. f. 368; Dup. Lép. Fr. vii. pt. 1, p. 66, pl. 104. f. 6; Staud. Cat. Lep. pal. p. 190.

Luperina immaculata, Staud. Cat. Lep. Eur. p. 99 (1871).

Head and thorax pale yellow-green; antennæ with the shaft white; palpi and tarsi brownish white; abdomen white faintly tinged with fuscous. Fore wing pale yellow-green, the costa and inner margin narrowly white; the lines absent; orbicular

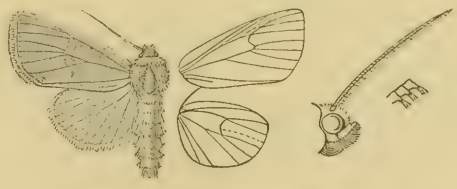


Fig. 155.—*Calamia virens*, ♂. ½.

represented by a small white spot; the reniform by a small lunule; cilia white with a faint fuscous line near base. Hind wing white faintly tinged with green, the basal half and inner area with brown; cilia and underside pure white.

Ab. 1. *immaculata*. Fore wing with the white stigmata absent.

Ab. 2. Fore wing with the reniform filled in with fuscous; hind wing wholly suffused with brown.

Hab. France, Sand Coll.; Germany, Zeller, Frey, and Leech Colls.; Austria; Hungary, Frey Coll.; Switzerland; Spain, Aragon; N. Italy; S. Sweden; Russia, Livonia, Zeller Coll., Sarepta; Armenia; Asia Minor, Taurus; Persia; W. Turkestan, Tarbagatai Mts., Issyk-Kul; W. Siberia, Altai. *Exp.* 42–50 millim.

Larva. Kirby, Butt. & Moths Eur. p. 166; Hffm. Raup. p. 96.

Green; head black. Food-plants: *Alsine media*, *Plantago lanceolata*, *Brachypodium pinnatum*, &c. 5–6.

Sect. II. (*Zotheca*). Antennæ of male ciliated.

4781. Calamia tranquilla.

Zotheca tranquilla, Grote, Bull. Buff. Soc. Nat. Sci. ii. p. 69 (1874); Smith, Cat. Noct. N. Am. p. 212

Cosmia sambuci, Behr, Streck. Lep. Rhop. & Het. p. 94 (1874).

Zotheca viridula, Grote, Bull. U.S. Geol. Geog. Surv. Terr. iv. p. 180 (1878).

Head, thorax, and abdomen pale ochreous suffused with bright rufous. Fore wing ochreous white suffused with bright rufous; a faint rufous antemedial line with small spot on costa, angled outwards in submedian fold and inwards on vein 1; a rufous medial shade, diffused on costal area, slight and oblique from lower angle of cell to inner margin with the faint oblique olive-green reniform on it; postmedial line rufous, obliquely bent outwards from below costa to vein 6 towards termen, excurved to vein 4, then oblique and slightly incurved, met at vein 6 by an oblique

Fig. 156.—*Calamia tranquilla*, ♂. ½.

shade from costa towards apex with a yellow point on it on costa; cilia bright rufous. Hind wing white slightly tinged with rufous; the underside with slight rufous mark at upper angle of cell and indistinct curved postmedial line from costa to vein 2.

Ab. 1. *viridula*. Head, thorax, and abdomen with the rufous replaced by pale yellow-green.

Hab. Canada, Vancouver (*J. J. Walker*), 1 ♂; U.S.A., Washington Forest Reserve (*Mrs. Nicholl*), 1 ♀, California, 3 ♂, 2 ♀ type *viridula*, Mt. Shasta (*Walsingham*), 1 ♂, Havilah, 1 ♂. *Exp.* 40 millim

Larva. Dyar, Can. Ent. xxiii. p. 205 (1891).

Plump and smooth, tapering at extremities, curled spirally when

at rest; small black piliferous dots normal, the 4th series behind the spiracles, the 5th and 6th series anteriorly and posteriorly on subventral space, and series 7 on the ventral surface of apodal somites very small; dorsum olive-grey with a broad yellow dorsal stripe broken up into two round spots on each segment, the anterior being twice indented or nearly bisected, the stripe narrower and somewhat confused towards extremities; an interrupted whitish subdorsal stripe edged with black, a lateral blue-grey stripe and broad yellow stigmatal stripe defined above by a waved black line; ventral surface blue-grey streaked with black; feet yellowish; spiracles black; or the dorsal and lateral areas blue-grey irrorated with black streaks, the dorsal and subdorsal stripes edged with black. Food-plant, *Sambucus*.

Cocoon thick, formed of silk.

Genus **CLETHRORASA**, nov.

Type, *C. pilcheri*.

Proboscis fully developed; palpi upturned, the 2nd joint smoothly scaled and flattened against frons, the 3rd short; frons smooth; eyes large, round; antennæ of male almost simple; thorax clothed almost entirely with scales and without crests; tibiæ smoothly scaled; abdomen with dorsal crests on basal segments. Fore wing narrow, the margins subparallel, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4782. **Clethrorasa pilcheri.**

Leocyma pilcheri, Hmpsn Moths Ind. iv. p. 512 (1896).

♂. Head and thorax white; palpi and lower part of frons black with a few white scales; antennæ black except basal joint; tegulæ at tips, pro- and mesothorax with paired metallic blue-black patches; pectus and legs black-brown with a purplish tinge, the coxæ with some white hair, the tibiæ and tarsi banded with white; abdomen brown with some greyish hair at base, the dorsal crests

Fig. 157.—*Clethrorasa pilcheri*, ♂. ½.

cupreous red. Fore wing white with deep metallic green spots and patches; basal and subbasal patches on costa and a small round subbasal spot below vein 1; an antemedial patch on costa and a bar from submedian fold to inner margin; orbicular represented by a small round spot, the reniform by a conical patch

connected with costa by an oblique patch, with a postmedial patch beyond it on costa; medial and postmedial bars from submedian fold to inner margin; a triangular subterminal spot on costa, a small spot below vein 3 and a bar from submedian fold to inner margin; black spots on cilia at discal and submedian folds. Hind wing fuscous black, the termen white interrupted by fuscous streaks on the veins; cilia white. Underside of fore wing fuscous brown, the inner and terminal areas white, the costal area blue-black with quadrate white spot beyond middle; hind wing fuscous brown with the submedian interspace and terminal area whitish, the costal area suffused with purple, a whitish band from middle of costa to lower angle of cell, two small subterminal brown spots below apex and one below vein 2.

Hab. Sikhim, 5000′ (*Pilcher*), 1 ♂ type. *Exp.* 40 millim.

Genus **APSARASA**.

	Type.
Apsarasa, Moore, P. Z. S. 1867, p. 665	*radians*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and very broadly scaled, the 3rd moderate; frons with rounded prominence with beak-like process at extremity; eyes large, round; antennæ of male laminate, minutely ciliated; thorax clothed almost entirely with scales and without crests; tibiæ smoothly scaled; abdomen with some rough hair at base and crest on basal segment. Fore wing rather narrow, the apex much rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 very shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Palpi with white patch at extremity of 2nd joint; tegulæ with yellow patch.
  a. Fore wing with medial yellow band on inner area; hind wing with the white patch extending to vein 1 ..... *nigrocærulea*.
  b. Fore wing with quadrate medial yellow patch on inner area; hind wing with the white patch not extending below vein 2 except at termen ..... *atramenta*.
B. Palpi without white at extremity of 2nd joint; tegulæ with two yellow bands.
  a. Hind wing with the white patch extending almost to cell ..... *radians*.
  b. Hind wing with irregular white patch on termen ..... *figurata*.

4783. **Apsarasa nigrocærulea**, n. sp. (Plate CXLIV. fig. 30.)

♂. Head and thorax blue-black; palpi with yellowish-white marks at extremities of 1st and 2nd joints in front; frons with pale yellow patch above, vertex of head with pale yellow bar; tegulæ with dorsal pale yellow patch, pro- and mesothorax with small spots and metathorax with large patch; coxæ with yellowish-white patches, the femora at extremity, tibiæ and fore and mid tarsi with yellowish bands; abdomen blue-black with small dorsal pale yellow spots on basal segments, the anal tuft pale yellow and the ventral surface pale yellow with sublateral black bands. Fore wing

metallic blue-black, the costal, inner and terminal areas with pale yellow patches leaving radiating blue-black bars and streaks; the costal area with small subbasal and antemedial yellow spots followed by a point, a medial bar followed by a striga, then a point, a triangular patch towards apex followed by an oblique bar and triangular apical patch; the terminal area with oblique streak below apex followed by a spot, spots below veins 4, 3, 2 and an oblique bar at tornus; the inner area with antemedial triangular spot followed by a striga, a broad medial band from submedian fold to inner margin followed by two striæ and a triangular patch before tornus; pale yellow points in middle of cell and at upper angle. Hind wing blackish brown with subapical yellowish-white streaks above and below vein 7; the terminal area yellowish white from just beyond cell between veins 6 and 1 and extending to termen as a small white mark below vein 1, its inner edge indented by streaks on the veins. Underside of fore wing with the dark areas fuscous brown, blue-black on costal area; hind wing with whitish streak in base of cell and patch below cell, a medial whitish band between vein 8 and median nervure.

Hab. Gilolo (*Doherty*), 1 ♂ type. *Exp.* 50 millim.

4784. **Apsarasa atramenta**, n. sp. (Plate CXLIV. fig 31.)

♂. Head and thorax cupreous brown; palpi with white patches at extremities of 1st and 2nd joints in front; frons with pale yellow patch above; vertex of head with yellow band; tegulæ with yellow patch with two black spots on it; pro- and mesothorax with yellow spots, metathorax with white patch; coxæ with white patches, the femora at extremity, tibiæ and fore and mid tarsi with white bands; abdomen cupreous brown suffused with metallic blue, the two basal segments with dorsal yellow bars, the anal tuft and ventral surface white. Fore wing cupreous brown, the costal edge and veins tinged with metallic blue, the costal, terminal, and inner areas with yellowish-white patches leaving radiating dark bars and streaks; the costal area with small subbasal and antemedial yellowish-white spots followed by a point, a medial bar and bar above end of cell followed by two points, a triangular patch towards apex followed by an oblique bar and triangular patch at apex; the terminal area with short oblique streak below apex followed by a point, a small spot below vein 4 and triangular spots at veins 3, 2, and 1; the inner area with triangular antemedial spot followed by a striga, a quadrate medial patch from submedian fold to inner margin followed by two striæ and a triangular spot before tornus; a minute point at middle of cell. Hind wing black-brown; a minute white streak below extremity of vein 7; a large white patch on terminal area between veins 7 and 2 extending to vein 1 as a narrow terminal band, its inner edge indented by streaks on the veins; the underside with subapical white streaks above and below vein 7, a slight streak in base of cell and discoidal spot and some whitish below base of cell.

Hab. Dutch N. Guinea, Kapaur (*Doherty*), 1 ♂ type, Andai (*Doherty*), 1 ♂. *Exp.* 46 millim.

4785. Apsarasa radians.

Apatela radians, Westw. Cab. Or. Ent. p. 58. pl. 28. f. 4 (1848); Hmpsn. Moths Ind. ii. p. 290.

♂. Head and thorax blue-black; palpi with white spot on 1st joint in front; frons with yellowish-white patch above; vertex of head, tegulæ at middle and tips, pro- meso- and metathorax with yellowish-white bands; coxæ with white patches, the tibiæ and fore and mid tarsi with white bands; abdomen blue-black with small dorsal white spots on basal segments, the anal tuft white, the ventral surface white with sublateral series of blue-black spots. Fore wing blue-black, the costal, terminal, and inner areas with yellowish-white patches leaving radiating blue-black bars and streaks the costal area with three small yellowish-white spots towards base, an antemedial spot followed by a bar, an oblique medial patch, a spot above end of cell followed by a bar extending to vein 6, then a triangular patch followed by an oblique bar and a triangular patch at apex; the terminal area with two oblique short fasciæ towards apex with curved striga before it, a minute

Fig. 158.—*Apsarasa radians*, ♂. ½.

streak at vein 5 and four wedge-shaped patches between vein 4 and tornus; the inner area with two antemedial wedge-shaped marks, a medial band from submedian fold to inner margin followed by a wedge-shaped patch with point above it, then a narrow band and a triangular patch before tornus; two yellowish-white points in middle of cell and a point at upper angle; the postmedial area with some waved blue-white striæ between veins 7 and 2. Hind wing black-brown; subapical elongate white marks above and below vein 7; the terminal area white from just beyond cell between veins 6 and 1 extending to tornus as a narrow mark, its inner edge indented by dark streaks on the veins; the underside with antemedial white spot on costa, medial band from costa to discal fold expanding into a spot on discocellulars and postmedial bar.

♀. Abdomen with the anal tuft and ventral surface blue-black, the latter with lateral and ventral series of white spots.

Hab. Sikhim (*Atkinson, Lidderdale, Möller*), 5 ♂, 2 ♀; Assam. *Exp.* 50–56 millim.

4786. Apsarasa figurata. (Plate CXLIV. fig. 32.)

Apsarasa figurata, Moore, P. Z. S. 1877, p. 604; Hmpsn. Moths Ind. ii. p. 290.

♀. Head and thorax blue-black; palpi with white spot on basal joint in front; frons with yellowish-white patch above; vertex of head and tegulæ at middle and tips with yellowish-white bands; pro- and mesothorax with yellowish spots and metathorax with yellowish patch; coxæ with white patches; femora at extremities, tibiæ and tarsi with white bands; abdomen black-brown tinged with metallic blue, the two basal segments with yellowish-white dorsal spots. Fore wing blue-black, the costal, terminal, and inner areas with yellowish-white patches leaving radiating blue-black bars and streaks; the costal area with three small yellowish-white spots on basal area followed by an oblique striga, then an erect striga, an irregular medial patch, a slight bar above end of cell followed by a striga, a triangular patch towards apex followed by an oblique bar and triangular patch at apex; the terminal area with two short oblique streaks towards apex with point before the upper one, a minute streak at vein 5 and four oblique triangular patches between vein 4 and tornus; the inner area with small triangular antemedial spot followed by a striga, a broad medial band from submedian fold to inner margin extending to just above the fold at extremity, followed by a wedge-shaped spot, then a narrow bar and wedge-shaped spot towards tornus; a yellowish-white point at middle of cell and another at upper angle. Hind wing black-brown with some white on termen between vein 4 and tornus, its inner edge very irregular and angled inwards below veins 4, 3, 2; cilia brown towards apex intersected by a slight white streak at vein 6 and with slight dark marks below veins 4 and 3; the underside with antemedial white spot on costa, slight streak in base of cell, some whitish below base of cell, faint medial band from costa to discal fold, slight postmedial spots below costa and vein 8, two short subapical streaks and slender elongate streaks above and below discal fold.

Hab. Andamans, 4 ♀ type. *Exp.* 46–50 millim.

Genus **MAZUCA**.

	Type.
Mazuca, Wlk. xxxv. 1777 (1866)	*strigicincta.*
Mila, Auriv. Ent. Tidskr. xiii. p. 187 (1892)	*strigicincta.*

Proboscis fully developed; palpi upturned, smoothly scaled, the 2nd joint reaching about to middle of frons, the 3rd short; frons with large somewhat conical prominence produced to a slight point in front; eyes large, round; antennæ of male laminate, ciliated; thorax clothed almost entirely with scales and without crests; tibiæ slightly fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with orange-red patches in and beyond end of cell, the bars of inner area orange-red .. .. *hæmagrapha.*
B. Fore wing with pink mark in end of cell, the bars of inner area blue-black ..... *strigicincta.*

*4787. Mazuca hæmagrapha, n. sp. (Plate CXLV. fig. 1.)

♂. Head and and thorax pale yellow; frons, vertex of head, tegulæ at base and near tips, pro- meso- and metathorax with black bands; patagia edged with black; antennæ black except basal joint; palpi with black bands on the joints; tibiæ banded with black; abdomen white slightly tinged with ochreous, the basal crest tipped with black; subbasal black patches on segments 4 to 7 and small sublateral spots on segments 5 to 7. Fore wing pale yellow; five rather oblique blue-black bars from basal half of costa, the first three connected by a slight streak, three bars above end of cell, one towards apex and a forked bar at apex; the terminal area with six radiating blue-black streaks expanding at the cilia and the streak at discal fold forked; the cell and a large patch beyond it extending to vein 2 orange-red with two small yellow spots defined by black at middle of cell with a black streak above median nervure to the discoidal figure-of-8-shaped mark formed of two yellow spots defined by black, the lower one with black point in centre, a black patch beyond lower angle of cell; an orange-red streak below basal half of median nervure with oblique red bar from it to inner margin near base and three radiating bars from its extremity; two oblique red bars from the discal red patch, the inner confluent with the outermost medial bar at inner margin. Hind wing white faintly tinged with ochreous.

Hab. Gold Coast; Wassaw Distr., 1 ♂ type in Coll. Rothschild. *Exp.* 38 millim.

4788. Mazuca strigicincta.

Mazuca strigicincta, Wlk. xxxv. 1777 (1866); Kirby, Cat. Lep. Het. p. 284.
Hypsa concinnula, Mab. Bull. Soc. Zool. Fr. iii. p. 85 (1878).
Apsarasa liturata, Butl. A. M. N. H. (5) vii. p. 37 (1881).
Mila hebraica, Auriv. Ent. Tidskr. xii. p. 228, pl. 1. f. 3 (1891).

Head and thorax pale yellow; frons with blue-black band above; back of head with two small spots; tegulæ, pro- meso- and metathorax with blue-black bars; patagia with spots at base and middle; fore and mid tibiæ with blue-black bands, the tarsi black at extremity; abdomen yellowish white with subdorsal blue-black spots on segments 5 to 7, dorsal spot on terminal segment, small subdorsal spots on three last segments and ventral spot on terminal segment. Fore wing pale yellow; two subbasal and two antemedial oblique blue-black bars from costa, a very oblique medial striga, a short postmedial striga followed by two incurved lines extending to vein 6, the inner connected by a streak with the discoidal mark, a point on costa towards apex followed by an

oblique striga extending to vein 7 and a short striga before apex; the terminal area with oblique streak from apex bent downwards at extremity to discal fold, a short streak below apex, elongate V-shaped mark at discal fold, short streak below vein 4, longer streaks at veins 3 and 2 connected by a curved line at extremity and oblique streak at tornus; a subbasal spot on median nervure followed by a strongly curved pink mark from subcostal nervure to

Fig. 159.—*Mazuca strigicincta*, ♂. ½.

submedian fold with a little black on its outer edge; a pink spot in cell towards extremity with blue-black spot above it and elongate pink mark in end of cell with two blue-black spots on upper edge, these pink marks connected by a blue-black streak above median nervure with spot below it at origin of vein 2; a black striga beyond the cell between veins 4, 3 followed by a pink spot with black points above and below it or both striæ pink with black points above and below; the inner area with double black antemedial line from submedian fold to inner margin strongly angled inwards on vein 1, very oblique medial line and two outwardly oblique postmedial lines. Hind wing semihyaline white.

Hab. Nigeria, Old Calabar (*Rutherford*, *Crompton*), 1 ♂, 2 ♀; Cameroons (*Rutherford*), 2 ♂ type *liturata*; Br. C. Africa, Zomba (*Cunningham*), 1 ♀, Zambesi. *Exp.* 40–44 millim.

Genus **CHASMINODES**, nov.

Type, *C. albonitens*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and smoothly scaled, the 3rd rather long; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with scales and hair mixed and without crests; tibiæ moderately fringed with hair; abdomen with dorsal series of crests. Fore wing with the apex rectangular, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from below upper angle; 7, 8, 9 stalked; 10, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

A. Fore and hind wings fuscous brown except basal area ..... *atrata.*
B. Fore and hind wings white.
  a. Fore wing with the veins streaked with fuscous ..... *nervosa.*
  b. Fore wing with the veins not streaked with fuscous.
    a^1. Fore wing with postmedial line.
      a^2. Fore wing with the apical area not tinged with fuscous. *cilia.*
      b^2. Fore wing with the apical area tinged with fuscous ... *nigrilinea.*
    b^1. Fore wing with the postmedial line absent ..... *albonitens.*

4789. Chasminodes atrata.

Chasmina atrata, Butl. A. M. N. H. (5) xiii. p. 274 (1884); Staud. Cat. Lep. pal. p. 226.
Leocyma borussica, Staud. Stett. ent. Zeit. 1888, p. 264; id. Rom. Mém. vi. p. 557, pl. 10. f. 11.

Head, thorax, and abdomen silvery white; palpi brownish in front and at tips; antennæ brown except basal joint; fore tibiæ brown on inner side. Fore wing fuscous brown with a cupreous tinge, the basal area silvery white except at costa, its outer edge diffused and obliquely curved from below costa to middle of inner margin; cilia tinged with white except at base. Hind wing silvery white to middle of costa and tornus, its outer edge diffused, the terminal half fuscous brown with a cupreous tinge; cilia tinged with white except at tips. Underside of fore wing with the white on inner area extending to tornus, some whitish suffusion beyond end of cell; hind wing with the veins at end of cell whitish.

Hab. E. Siberia, Amurland, Ussuri; Japan, Yesso (*Pryer*), 8 ♂, 1 ♀ type. *Exp.* 26–28 millim. This species has been taken *in copula* with *C. albonitens*.

4790. Chasminodes nervosa. (Plate CXLV. fig. 2.)

Leocyma nervosa, Butl. Trans. Ent. Soc. 1881, p. 187.

Silvery white; palpi tinged with fuscous above at tips; antennæ blackish except at base; fore tibiæ fuscous on inner side. Fore wing with the costal edge fuscous towards base; the veins tinged with fuscous; a punctiform fuscous terminal line; cilia faintly tinged with brownish. Hind wing with fine fuscous terminal line from apex to vein 2. Underside of fore wing suffused with fuscous brown, the costa and termen whitish, a whitish streak in cell, the inner area white, the veins darker.

Hab. Japan, Hakodaté, 1 ♂, Nagahama (*Leech*), 1 ♀, Tokio (*Maries*), 1 ♂ type, Yokohama (*Manley*), 3 ♂, 3 ♀. *Exp.* 24–28 millim.

4791. Chasminodes cilia.

Leocyma cilia, Staud. Stett. ent. Zeit. 1888, p. 263; id. Rom. Mém. vi. p. 557, pl. 10. f. 10; id. Cat. Lep. pal. p. 225.

♂. Head and thorax pure white; palpi with the base of 3rd joint black; antennæ fuscous brown except at base; tips of tegulæ and outer edge of patagia slightly tinged with brown; fore tarsi ringed with black; abdomen white dorsally faintly tinged with brown. Fore wing pure glossy white; a small black spot at lower angle of cell; a fine curved postmedial black line; a series of small black spots on apical part of costa and termen. Hind wing pure glossy white. Underside of fore wing with the costa narrowly black to the series of small spots; hind wing with some black points on termen from apex to vein 2.

Hab. E. Siberia, Amurland, 1 ♂, Ussuri. *Exp.* 28 millim.

4792. Chasminodes nigrilinea.

Leocyma nigrilinea, Leech, P. Z. S. 1889, p. 522, pl. 51. f. 8.

♀. Head, thorax, and abdomen pure white; antennæ tinged with fuscous except at base; fore tarsi ringed with brown. Fore wing silvery white; a brownish postmedial line obliquely excurved from costa to vein 4, then oblique and slightly angled outwards at vein 1; a terminal series of small fuscous lunules; cilia white at base, fuscous at tips. Hind wing white; a curved postmedial line from costa to submedian fold, the area beyond it tinged with brown to vein 2; a fine brown terminal line; cilia white tinged with brown at apex. Underside of fore wing brown, the costa and inner area white, whitish streaks in and beyond the cell and in interspaces of terminal area; hind wing with curved diffused postmedial line from costa to vein 2, the area beyond it irrorated with fuscous.

Hab. Japan, Yokohama (*Pryer*), 1 ♀ type. *Exp.* 34 millim.

4793. Chasminodes albonitens.

Acontia albonitens, Brem. Bull. Ac. St. Pétersb. iii. p. 490 (1861); id. Lep. Ost-Sib. p. 55, pl. 5. f. 15; Staud. Cat. Lep pal. p. 225.

Silvery white; palpi with the base of 3rd joint blackish; antennæ blackish except at base; fore tibiæ with black point at base, the tarsal joints with black points at base. Fore wing with

Fig. 160.— *Chasminodes albonitens*, ♂. ½.

two slight discoidal black points or slight lunule and a terminal series of slight black points. Hind wing with slight black points on termen from apex to vein 2.

Hab. W. Siberia, Ussuri, 2 ♂, 2 ♀; Japan, Yesso (*Pryer*), 3 ♀, Hakodaté (*Leech*), 2 ♂, Oiwake (*Pryer*), 1 ♂, Tokio (*Maries*), 1 ♂, 1 ♀; Corea, Gensan (*Leech*), 2 ♂. *Exp.* 28–36 millim.

Genus CHASMINA.

	Type.
Chasmina, Wlk. ix. 146 (1856)	*tibialis.*
Sphragifera, Staud. Rom. Mém. vi. p. 554 (1892)	*sigillata.*
Clinophlebia, Hmpsn. Ill. Het. B.M. ix. p. 92 (1893)	*sericea.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head, smoothly scaled and flattened against frons, the 3rd short; frons smooth,

eyes large, round; antennæ of male almost simple; thorax clothed almost entirely with scales and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex typically rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. (*Clinophlebia*). Fore wing of male with the apex rectangular, the costa somewhat excised beyond middle and the costal neuration slightly distorted.

4794. Chasmina sericea.

Clinophlebia sericea, Hmpsn. Ill. Het. B.M. ix. p. 92, pl. 161. f. 7 (1893); id. Moths Ind. ii. p. 289.

Silvery white; palpi orange above and at tips; lower part of frons orange, the upper part fulvous; antennæ fulvous except basal joint; fore femora above, the tibiæ and tarsi orange with two black

Fig. 161.—*Chasmina sericea*, ♂. ½.

spots on the tibia and one on the 1st tarsal joint; anal tuft with some yellow at side; wings uniform silvery white.

Hab. Formosa (*Hobson*), 1 ♂, 3 ♀; Ceylon, Colombo (*Green*), 1 ♂, 2 ♀ type; Burma, Rangoon, 1 ♂; Cocos Keeling I. (*Wood-Jones*), 1 ♂, 1 ♀; Christmas I. (*Andrews*), 1 ♀; New Caledonia (*Layard*), 1 ♀. *Exp.* 40–50 millim.

Sect. II. (*Chasmina*). Fore wing with the apex rounded, the costa not excised, the neuration normal.

A. Fore wing without subapical or postmedial dark patches.
  a. Fore wing without postmedial line.
    a^1. Fore tibiæ and tarsi orange with black points.
      a^2. Fore wing with black points on termen below apex ..... *tibiopunctata*.
      b^2. Fore wing without black point on termen below apex ..... *tibialis*.
    b^1. Fore tibiæ and tarsi white slightly tinged with brown ..... *alcidamea*.
  b. Fore wing with fine dark postmedial line.
    a^1. Fore wing without black points on costa representing the lines ..... *tenuilinea*.
    b^1. Fore wing with black points on costa representing the lines ..... *judicata*.

B. Fore wing with sinuous dark patch from costa before apex.
  a. Fore wing with four black points on costa representing the lines ..... *rejecta*.
  b. Fore wing with three small orange spots on costa representing the lines ..... *pulchra*.
C. Fore wing with elliptical rufous patch in and beyond end of cell ..... *maculata*.
D. Fore wing with large rounded subapical rufous patch. *sigillata*.
E. Fore wing with hemispherical subapical rufous patch. *biplaga*.

4795. Chasmina tibiopunctata. (Plate CXLV. fig. 3.)

Leocyma tibiopunctata, Beth.-Baker, Nov. Zool xv. p. 197 (1908).
Leocyma nigropunctata, Beth.-Baker, Nov. Zool. xv. p. 197 (1908).

Silvery white; palpi orange above and black at tips; lower part of frons tinged with orange, the upper part blackish brown; antennæ blackish brown except basal joint; fore femora orange above with fuscous streak, the tibiæ orange with two black spots, the tarsi white, the two last joints tinged with orange and with four black spots; wings uniform silvery white, the fore wing with a black point on termen just below apex.

Ab. 1. *nigropunctata*. Fore wing with terminal series of small black points.

Ab. 2. Fore wing with terminal series of larger points; hind wing with three points on middle of termen.

Hab. Br. N. Guinea, Babooni (*Pratt*), 1 ♂, 1 ♂, Mt. Kebea (*Pratt*), 2 ♂, 2 ♀, Mafalu (*Pratt*), 1 ♂, Ekeikei (*Pratt*), 1 ♂, 1 ♀. *Exp.* 46–54 millim.

4796. Chasmina tibialis.

Noctua tibialis, Fabr. Syst. Ent. p. 578 (1775).
Leocyma vestæ, Guen. Noct. ii. p. 213 (1852).
Leocyma dianæ, Guen. Noct. ii. p. 213 (1852).
Chasmina cygnus, Wlk. ix. 147 (1856); Butl. Ill. Het. B. M. vi. p. 35, pl. 110. f. 3; Hmpsn. Moths Ind. ii. p. 289.
Chasmina glabra, Wlk. xxxii. 636 (1865).
Leocyma celebensis, Snell. Tijd. v. Ent. xxiii. p. 54 (1880).
Xanthodes mariæ, Mab. C.R. Ent. Soc. Belg. xxv. p. lx (1881).

Silvery white; palpi orange-yellow above and at tips; lower

Fig. 162.—*Chasmina tibialis*, ♂ ♮.

part of frons orange-yellow, the upper part fulvous brown; antennæ yellow except at tips; fore femora orange above with fuscous

streak, the tibiæ and tarsi orange with two black points on the tibia and one on 1st or 1st two tarsal joints; wings uniform silvery white.

Ab. 1. *vestæ*. Fore wing rather broader and less produced, without series of black points before termen.

Ab. 2. *dianæ*. Fore wing with series of slight black points just before termen.

Hab. W. Africa, Senegal, Cape Coast Castle (*Higlett*), 1 ♀, S. Nigeria, Vivet (*Dudgeon*), 1 ♂, 1 ♀: Mashonaland, Salisbury (*Marshall*), 1 ♀, Umcheke Rd. (*Marshall*), 1 ♀; Natal, Durban (*Leigh*), 1 ♀; Madagascar, type † *mariæ* in Coll. Mabille; Seychelles (*Trevor-Roper*), 1 ♀; Punjab, 4 ♂, 1 ♀, type *cygnus*, Jubbulpore, 1 ♂, Deyra Dhun, 1 ♀; Sikhim (*Dudgeon*), 2 ♀; Madras, Nilgiris (*Hampson*), 2 ♀; Ceylon, Diyatalawa (*Green*), 1 ♂, 1 ♀; Sumatra; Celebes; Br. New Guinea, Ekeikei (*Pratt*), 2 ♂, 2 ♀, Mt. Kebea (*Pratt*), 1 ♀; Australia, type ♀, Banksian Coll.; Queensland, Brisbane (*Turner*), 2 ♀; N. S. Wales (*Wood*), 1 ♂, type *glabra*; Rarotonga (*Wyatt*), 2 ♂: Tahiti (*Matthew, J. J. Walker*), 3 ♂, 8 ♀. *Exp.* 34–54 millim.

4797. Chasmina alcidamea.

Chasmina alcidamea, Druce, P. Z. S. 1890, p. 512; id. Biol. Centr.-Am., Het. ii. p. 474, pl. 93. f. 7.

♂. Head and thorax white, the palpi and antennæ tinged with brown; fore femora fuscous above; abdomen white tinged with ochreous; wings pure white.

Hab. Guatemala (*Rodriguez*), 1 ♂ type Godman-Salvin Coll. *Exp.* 40 millim.

4798. Chasmina tenuilinea, n. sp. (Plate CXLV. fig. 4.)

♀. Silvery white; fore tibia with two black points, the 1st joint of tarsus with one point, the other joints ringed with yellow; mid and hind tarsi with black points on terminal joints. Fore wing with fine brown postmedial line obliquely excurved from costa to vein 6, then slightly incurved; traces of a series of black points just before termen.

Hab. Bali (*Doherty*), 1 ♀ type. *Exp.* 24 millim.

4799. Chasmina judicata.

Acontia judicata, Wlk. xv. 1760 (1858); Hmpsn. Moths Ind. ii. p. 289.
Chasmina linea, Hmpsn. Ill. Het. B. M. viii. p. 73, pl. 145. f. 3 (1891).

♂. Silvery white; palpi blackish in front towards tips; antennæ fuscous except at base; fore femora fuscous above, the tibiæ with two black spots and the 1st two joints of tarsi with one spot; mid and hind tibiæ at extremity and the 1st two joints of tarsi with black points. Fore wing with subbasal and antemedial black points

on costa; a medial black point on costa with traces of an obliquo yellow striga from it; postmedial line pale brown with a black point on costa, obliquely excurved to vein 6, then slightly incurved; a series of slight black points just before termen; a fine brownish terminal line; cilia fuscous at tips. Hind wing with fine brownish terminal line, the cilia tinged with fuscous at tips; the underside with black points on termen from apex to vein 3.

Hab. Punjab, 1 ♂ type, Jubbulpore, 3 ♀; Rajputana, 1 ♂; Madras, Nilgiris (*Hampson*), 1 ♂ type *linea*, Travancore, Pirmád (*Imray*), 3 ♂; Ceylon. *Exp.* 36 millim.

4800. Chasmina rejecta.

Noctua rejecta, Fabr. Syst. Ent. p. 601 (1775).
Acontia bimacula, Wlk. xii. 796 (1857); Butl. Ill. Het. B. M. iii. p. 20, pl. 45. f. 8; Hmpsn. Moths Ind. ii. p. 289.
Chasmina stigmata, Hmpsn. Ill. Het. B. M. viii. p. 73, pl. 145. f. 10 (1891).

Silvery white; palpi brown above and at tips; frons with brown bar above; antennæ brown; fore femora black above, the tibiæ with two black bands, the tarsi banded with black; mid and hind tibiæ with black points at extremity, the 1st two joints of tarsi with black points, the terminal joints ringed with yellowish. Fore wing with small subbasal and antemedial black spots on costa; a medial black spot on costa with oblique yellow striga from it; a faint postmedial yellowish line with black spot on costa and series of black points just beyond it on veins 6 to 1, slightly bent outwards below costa, excurved to vein 4, then oblique; a brownish subterminal mark defined by black and with two white points on it on costa, extending to vein 6, its inner edge slightly indented below costa and its outer edge sharply at vein 7, a diffused yellow line from it to inner margin; a series of slight black striæ just before termen; a fine yellowish terminal line; cilia with yellowish line at middle and yellowish tips. Hind wing with fine yellowish terminal line; the underside with terminal series of black points from apex to vein 3.

Ab. 1. *stigmata.* Fore wing with the markings obsolescent, the costal patch yellowish rufous.

Hab. N. China, 1 ♂, Wei-ha-wai (*de la Garde*), 1 ♀; Hong Kong (*Bowring, J. J. Walker*), 1 ♂, 1 ♀ type *bimacula*; Punjab, Jubbulpore, 1 ♂; Madras, Nilgiris (*Hampson*), 1 ♂ type *stigmata*, Travancore, Trevandrum (*Fergusson*), 1 ♂; Ceylon; Burma, Hsipaw (*de Nicéville*), 1 ♀; Nicobars (*Rogers*), 1 ♂, Nancowry, 1 ♀. *Exp.* 26–36 millim.

4801. Chasmina pulchra. (Plate CXLV. fig. 5.)

Acontia pulchra, Wlk. xii. 797 (1857).

Silvery white; palpi fulvous yellow at tips; frons with fulvous yellow band above; antennæ fulvous; fore femora orange above at

extremity, the tibiæ and tarsi banded with orange. Fore wing with subbasal, antemedial, and medial orange-red spots on costa; a subterminal red-brown patch from costa to vein 4, orange-red at costa on inner side and blue-black and white on outer, its lower part bent outwards, traces of a maculate brown line from it to submedian fold and a black striga at inner margin; a series of brown striæ just before termen with a black point below vein 4; a fine brown terminal line; cilia brownish at tips. Hind wing semihyaline white.

Hab. N.W. Australia (*Gray*), 1 ♂ type; Queensland, Brisbane (*Turner*), 1 ♀. *Exp.* 46 millim.

*4802. Chasmina maculata. (Plate CXLV. fig. 6.)

Leocyma maculata, Hmpsn. Moths Ind. ii. p. 290 (1894).

♀. Head and thorax white slightly tinged with ochreous; palpi with the 1st and 2nd joints black behind; fore tarsi brown ringed with white; abdomen white tinged with ochreous and dorsally with brown. Fore wing white slightly tinged with ochreous; antemedial line faint, double, brownish, waved, oblique, with two dark points at costa; orbicular and reniform olive-brown slightly defined by red-brown, the former minute, round, in upper part of cell, the latter very large, elliptical, lobed on outer side and below, a slight blackish mark above it on costa and a red-brown line from it to inner margin; postmedial line double, red-brown, blackish at costa, minutely waved and evenly curved, ending near tornus; subterminal line absent; a terminal series of prominent black points. Hind wing white tinged with ochreous, the inner area with brownish; a slight discoidal point and terminal series of black points from apex to vein 2; the underside with the costal area slightly irrorated with black, a small black discoidal spot and postmedial series of minute streaks on the veins.

Hab. Burma, E. Pegu, 4500′ (*Doherty*), type † ♀ in Coll. Rothschild. *Exp.* 34 millim.

4803. Chasmina sigillata. (Plate CXLV. fig. 7.)

Anthœcia sigillata, Mén. Bull. Ac. St. Pétersb. xvii. p. 219 (1859); id. Schrenk's Reis. im Amurl., Lep. p. 60, pl. 5. f. 3; Staud. Cat. Lep. pal. p. 226.

Head and thorax silvery white, the latter slightly tinged and irrorated with brown; palpi black-brown above and at tips; frons black-brown; antennæ brown except at base; fore femora above and tibiæ black-brown; abdomen white tinged with ochreous and irrorated with brown. Fore wing silvery white; a subbasal black point in cell; an oblique waved antemedial brown line; reniform a narrow lunule defined by black; a slight brown postmedial line from just beyond lower angle of cell to inner margin,

incurved to vein 1 where it is angled outwards; a large somewhat irregularly rounded postmedial chocolate-brown patch from just below costa to above vein 3; two slightly waved subterminal brown lines from vein 6 to inner margin; a waved blackish line just before termen; a fine brown terminal line; cilia tinged with yellow brown. Hind wing white tinged with ochreous and with faint brownish patch on termen below apex; some brown striæ on apical half of termen. Underside of fore wing with diffused brown patch on basal half of costa and cell, the postmedial patch brown; hind wing with small discoidal spot and curved postmedial series of points.

Hab. W. Siberia, Ussuri; Japan, Hakodaté, 1 ♂, Oiwake (*Pryer*), 2 ♂, 1 ♀. *Exp.* 40–42 millim.

4804. **Chasmina biplaga.**

Acontia biplaga, Wlk. xii. 795 (1857); Butl. Ill. Het. B. M. iii. p. 19, pl. 45. f. 7.
Euphasia subapicalis, Wlk. xxxiii. 780 (1865).
Acontia biplagiata, Wlk. xxxiii. 781 (1865).

Silvery white; palpi fulvous above and at tips; frons with black bar above; antennæ brown; legs tinged with ochreous brown, the fore tibiæ with two blackish points; abdomen with faint diffused brownish ochreous bands. Fore wing with oblique wedge-shaped fulvous band from middle of costa to lower angle of cell; reniform incompletely defined by brown and with brown spot at middle, constricted at middle; a yellow-brown wedge-shaped patch from lower angle of cell to termen between veins 4 and 1; a bright rufous elliptical subterminal patch from just below costa to vein 4; a yellow-brown mark at apex and slight subterminal line followed by a fine waved line just before termen with black point on it below vein 4; a fine brown terminal line; cilia brown at tips. Hind wing with diffused brownish terminal band, the cilia tinged with brown; the underside with slight discoidal spot and curved postmedial series of points.

Hab. Japan, Fusan (*Leech*), 1 ♂, Shimonoseki (*Leech*), 1 ♂, Isuruga (*Leech*), 1 ♀, Nikko (*Ito*), 1 ♀; Corea, Gensan (*Leech*), 2 ♂; N. China (*Fortune*), 2 ♂ type and type *subapicalis*, Nankow Pass, 1 ♀; C. China, Ningpo, 1 ♀; W. China, Kwei-chow, 1 ♂, Changyang (*Pratt*), 1 ♂. *Exp.* 32–38 millim.

Genus **MOLVENA.**

Type.
Molvena, Wlk. xxxiv. 1266 (1865) ..... *guttalis.*

Proboscis fully developed; palpi porrect, extending to just beyond frons and moderately fringed with hair below; frons with long truncate corneous process with raised edges and pointed corneous plate below it; eyes large,

round; antennæ of female ciliated; thorax clothed almost entirely with scales and without crests; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4805. Molvena guttalis.

Molvena guttalis, Wlk. xxxiv. 1267 (1865).
Bryophila militata, Lucas, Pr. R. Soc. Queensl. xiii. p. 71 (1898).

♀. Pale sea-green; palpi black except at tips; antennæ black except at base; vertex of head with black spot; patagia with black bars near base; pro- and mesothorax with paired black spots; tibiæ and tarsi banded with black; abdomen with black bands except at

Fig. 163.—*Molvena guttalis*, ♀. ½.

base and on ventral surface. Fore wing with black spot at base; subbasal spots on costa and below cell, followed by spots on costa, in submedian fold and on inner margin, with a bar-shaped mark in cell further from base; orbicular and reniform small black spots with white centres, connected by an oblique streak and the former connected with costa by an irregular band; the medial area with two black bars in submedian interspace and spots on inner margin; three small black spots beyond end of cell; postmedial line represented by a spot on costa, a maculate line between veins 7 and 4 emitting short streaks in the interspaces, a point below vein 4, and an incurved line between vein 3 and tornus; two black marks from costa towards apex, a trifid mark at middle of termen and a sagittate mark above tornus; some black points on termen. Hind wing with slight discoidal black lunule, diffused medial line from vein 6 to above tornus and broad terminal band from apex to submedian fold.

Hab. Queensland, Moreton Bay (*Diggles*), 1 ♀ type. *Exp.* 36 millim.

Genus CALLYNA.

	Type.
Callyna, Guen. Noct. i. p. 112 (1852)	*siderea.*

Probescis fully developed; palpi upturned, the 2nd joint reaching to vertex of head, smoothly scaled and flattened against the frons, the 3rd short or moderate; frons smooth; eyes large, round; antennæ of male typically

ciliated; thorax smoothly clothed almost entirely with scales and without crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing rather narrow, the margins subparallel, the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with very short branches dilated at extremity.

4806. Callyna nigerrima.

Callyna nigerrima, Hmpsn. Ann. S. Afr. Mus. ii. p. 490 (1902).

Head and thorax velvety black; mid tibiæ with orange patch, the tarsi ringed with grey; abdomen greyish fuscous. Fore wing uniform velvety black with an antemedial and four postmedial

Fig. 164.—*Callyna nigerrima*, ♂. ½.

slight orange points on costa. Hind wing glossy fuscous brown with a greyish tinge; the underside bluish grey thickly irrorated with fuscous, the apical area rather blacker, a faint diffused curved postmedial line.

Hab. Br. C. Africa, Stevenson Rd. (*Dewar*), 1 ♀; Mashonaland, Salisbury (*Marshall*), 3 ♂, 3 ♀ type; Zululand, 1 ♂. *Exp.* 38–44 millim.

Sect. II. Antennæ of male ciliated.

A. Abdomen with the terminal segments orange ..... *siderea.*
B. Abdomen with the terminal segments not orange.
  a. Fore wing black ..... *decora.*
  b. Fore wing purplish brown.
    a^1. Fore wing with white or yellowish apical patch.
      a^2. Fore wing with ante- and postmedial black patches on costa.
        a^3. Fore wing with the postmedial line dentate and produced to white points on the veins from vein 4 to inner margin ..... *costiplaga.*
        b^3. Fore wing with the postmedial line not dentate or produced to white points from vein 4 to inner margin ..... *leucosta.*

b^2. Fore wing without ante- and postmedial black patches on costa.
a^3. Fore wing with dark fascia in discal fold between postmedial and subterminal lines.
a^4. Fore wing with the claviform a chocolate mark confluent with orbicular ..... *figurans*.
b^4. Fore wing with the claviform represented by a small black spot ..... *jugaria*.
c^4. Fore wing with the claviform absent.
a^5. Fore wing with the postmedial line dentate from costa to vein 4 ..... *semivitta*.
b^5. Fore wing with the postmedial line oblique and straight from costa to vein 4 ..... *mystica*.
b^3. Fore wing with oblique dark shade beyond postmedial line from costa to vein 4..... *obscura*.
c^3. Fore wing without dark fascia or shade beyond postmedial line..... *monoleuca*.
b^1. Fore wing without pale apical patch.
a^2. Hind wing dark brown ..... *fuscantaria*.
b^2. Hind wing white, the terminal area tinged with brown..... *cupricolora*.

4807. Callyna siderea.

Callyna siderea, Guen. Noct. i. p. 113 (1852); Hmpsn. Moths Ind. ii. p. 356.

Head and thorax black glossed with blue; palpi with the basal joint and the basal half of 2nd joint in front orange; coxæ orange; tibiæ and tarsi banded with orange; abdomen black glossed with blue, the four terminal segments and the ventral surface orange. Fore wing black strongly glossed with blue; an orange point at base; subbasal line represented by an orange spot below costa; antemedial line black, excurved below costa where there is an orange

Fig. 165.—*Callyna siderea*, ♂. ¾.

spot before it and ending at submedian fold; claviform large, defined by black, except its basal part above and with a black streak through it; orbicular and reniform defined by black and with black bars in centres, both elliptical, the former incomplete above and below; postmedial line black, curved downwards and bent outwards below costa where there is a large white spot beyond it, excurved to vein 4, then incurved and ending at submedian fold, some white points beyond it on costa; subterminal line represented by a series of small black spots, somewhat excurved below vein 7 and at middle and ending at submedian fold, with an orange subapical spot beyond it with some white above it on costa and black point on it; a

more or less complete series of orange points before termen; a terminal series of black points; cilia brownish at tips. Hind wing fuscous brown with two small bluish-white subapical spots; cilia whitish at tips in submedian interspace; the underside bluish white, the veins, costal area towards apex, terminal area to vein 2, and a slight discoidal bar blackish.

Hab. S. China, Hainan, Five Fingered Mts. (*Whitehead*), 1 ♂; Punjab (*Horne*), 1 ♂, 1 ♀, Almorah (*Boys*), 1 ♂, 1 ♀, Dharmsála (*Hocking*), 1 ♀, Alahabad, 1 ♂; Nepal, 1 ♂; Assam, Khásis; Bombay, Poona; Ceylon (*Pole*), 1 ♀. *Exp.* 36–42 millim.

4808. Callyna decora. (Plate CXLV. fig. 8.)

Callyna decora, Wlk. xiii. 1119 (1857).

Head and thorax black; palpi, pectus, and legs greyish fuscous, the tibiæ and tarsi ringed with orange; abdomen greyish fuscous. Fore wing glossy black; a subbasal band from costa to submedian fold, antemedial bar from costa to subcostal nervure and postmedial spot on costa pinkish white, whiter at costa; some whitish points on postmedial part of costa and a pinkish-white apical spot with its outer edge excised. Hind wing glossy black-brown with a greyish tinge, the costal area whitish; the underside dark bluish grey with the apical area blackish, traces of a curved postmedial line.

Hab. Natal, Durban (*Gooch*, *Leigh*), 3 ♂, 2 ♀. *Exp.* 42–50 millim.

Larva. White with irregular crimson patches more or less completely ringed with black spots and forming ill-defined segmental bands; the dorsal patches on 11th and 12th somites obsolete and replaced by a faint pink tinge; the head, 1st and anal somites with the marking entirely black; the abdominal somites with black bars in front; the warts black with long white hairs, the subbasal warts on somites 4, 5, 6 elongate conical.

4809. Callyna costiplaga.

Callyna costiplaga, Moore, Lep. Ceyl. iii. p. 100, pl. 156. f. 10 (1885); Hmpsn. Moths Ind. ii. p. 357.

Head and tegulæ velvety black, the latter with a few white scales at tips; palpi brown, whitish at base; thorax red-brown; pectus whitish; legs brown mixed with ochreous, the tibiæ and tarsi ringed with ochreous white; abdomen red-brown, the ventral surface whitish. Fore wing red-brown mixed with some ochreous; subbasal line double filled in with ochreous, obliquely curved, from costa to submedian fold; the antemedial area with large quadrate velvety-black patch from costa to median nervure, with a small spot below it on the inner edge of the antemedial line which is double, filled in with ochreous, oblique, sinuous; claviform represented by a few black scales at its extremity; orbicular and

reniform with ochreous annuli and some white scales in lower part, both constricted at middle; medial line red-brown, blackish at costa, oblique to reniform, erect from lower angle of cell to inner margin; postmedial line double and filled in with ochreous, oblique and sinuous from costa to vein 5, then minutely dentate and produced to white points on the veins; the postmedial area with quadrate velvety black patch from costa to vein 5; subterminal line ochreous defined on inner side by small black spots at middle, excurved below vein 7 and at middle and bent outwards to tornus, a rounded white patch beyond it at apex leaving small brown spots on termen; cilia dark red-brown with a fine yellow line at base. Hind wing fuscous brown with a cupreous gloss; cilia yellow with slight dark spots from apex to vein 2; the underside ochreous white irrorated with brown, the terminal area suffused with brown, a slight discoidal lunule and curved postmedial line.

Hab. Bombay (*Leith*), 1 ♂; Madras, Nilgiris (*Hampson*), 1 ♂, 1 ♀; Ceylon (*Mrs. Lindesay*), 4 ♀ type, Trincomali (*Yerbury*), 1 ♂. *Exp.* 44–50 millim.

4810. **Callyna leuconota.** (Plate CXLV. fig. 9.)

Callyna leuconota, Lower, Tr. R. Soc. S. Austr. xxvii. p. 35 (1903).
Callyna biplagiata, Beth.-Baker, Nov. Zool. xiii. p. 217 (1906).

Head and tegulæ black-brown; thorax greyish brown; tibiæ and tarsi with pale bands; abdomen fuscous brown. Fore wing greyish brown; an indistinct somewhat curved subbasal line from costa to submedian fold with a black patch from it to the antemedial line which is angled outwards below costa, incurved in cell then excurved to vein 1 below which it is obsolete, the patch ending in a curved point on the antemedial line below the cell; orbicular small, round, with fuscous centre and grey annulus, a black point below it in submedian fold; a medial shade indistinct and oblique from costa to median nervure, then more prominent and erect; reniform narrow, with grey annulus; postmedial line indistinct, oblique and incurved from costa to discal fold, then double and erect, a large black-brown patch on costa from it to subterminal line extending to discal fold; subterminal line incurved from costa to vein 7, angled inwards in discal fold, excurved at middle and incurved below vein 3, some dentate black marks on its inner edge at middle and a white patch beyond it at apex; a terminal series of slight dark lunules with white points between them. Hind wing fuscous brown, the cilia white at tips; the underside with the basal half greyish, a small discoidal spot and curved postmedial line.

Hab. Br. N. Guinea, Ekeikei (*Pratt*), 1 ♀; Queensland, Brisbane, type † ♀ in Coll. Lower. *Exp.* 46 millim. Type † ♂ *biplagiata* in Coll. Bethune-Baker.

4811. Callyna figurans. (Plate CXLV. fig. 10.)

Callyna figurans, Wlk. xv. 1067 (1858).

♀. Head black-brown with white patch on frons and some white above eyes, the palpi irrorated with white; thorax chocolate-red with a few white scales; pectus bluish grey; legs brown, the tibiæ and tarsi ringed with yellowish white; abdomen fuscous tinged with bluish grey, the ventral surface irrorated with white. Fore wing chocolate-red with a purplish-grey gloss and irrorated with a few white scales; some ochreous-yellow marks at base; subbasal line defined on each side by diffused ochreous yellow, sinuous, from costa to submedian fold, a curved yellow striga beyond it across the cell; antemedial line formed by dark striæ defined on each side by ochreous yellow, oblique, sinuous, with white point before it on vein 1; claviform deep chocolate, extending to cell; orbicular and reniform with ochreous annuli, the former with deep chocolate centre, round, the latter with its centre deep chocolate on inner side, yellowish on outer; postmedial line formed by dark striæ defined on each side by rather diffused ochreous, oblique from costa to vein 4, then slightly incurved, a deep chocolate fascia from it to subterminal line in discal fold; a pure white rather lunulate spot on costa before apex tinged with ochreous at costa; subterminal line formed by slight ochreous marks tinged with red and defined on inner side by slight chocolate lunules, somewhat excurved at middle; a terminal series of minute white points. Hind wing fuscous brown with a faint bluish grey gloss; a terminal series of slight white points; the underside fuscous brown irrorated with white, the basal and inner areas suffused with blue-grey, a slight dark discoidal bar and rather diffused postmedial band.

Hab. Natal, Durban (*Gueinzius, Leigh*), 2 ♀ type. *Exp.* 38–44 millim.

Larva. Pale yellow with double dorsal series of small brown spots forming bars on somites 4, 5, 6, and 12; three subdorsal lines, a lateral line and a broad sublateral fascia; head red; prolegs pink.

4812. Callyna jugaria.

Callyna jugaria, Wlk. xv. 1809 (1858); Hmpsn. Ill. Het. B. M. ix. p. 106, pl. 163. f. 20; id. Moths Ind. ii. p. 356.

Head chocolate-brown; palpi paler, whitish at base; tegulæ black-brown; thorax grey-brown; pectus and legs whitish tinged with brown, the tibiæ and tarsi brown ringed with white; abdomen grey-brown, the anal tuft pale rufous, the ventral surface whitish tinged with rufous. Fore wing chocolate-brown with a purplish gloss, the basal inner area greyish, the antemedial costal area and the medial area except at costa and inner margin suffused and irrorated with grey; subbasal line double, grey, curved, from costa to submedian fold; antemedial line double, grey, oblique, slightly

sinuous; claviform represented by a small black spot; orbicular and reniform defined by grey, the former with grey-brown centre, inwardly oblique elliptical, the latter with its centre irrorated with grey, rather narrow and constricted at middle, a white point beyond its lower extremity, a chocolate-brown fascia from it to subterminal line in discal fold interrupted by the postmedial line which is dark defined on outer side by diffused grey, oblique from costa to vein 4, then incurved; subterminal line very slight, whitish, defined on inner side by deep chocolate, excurved below vein 7 and at middle, incurved at discal fold and almost obsolete below vein 3, a white spot beyond it at apex; a terminal series of small chocolate spots; cilia with a fine whitish line at base. Hind wing brown with a cupreous gloss; cilia whitish; the underside whitish irrorated and suffused with brown, especially on terminal half leaving the termen whiter, a dark discoidal lunule.

Hab. Punjab, Deyra Dhun, 1 ♀, Manpuri, 1 ♂; Sikhim (*Grote, Lidderdale*), 2 ♀; Bengal, 1 ♀ type; Ceylon, Pundaloya (*Green*), 2 ♀; Andamans. *Exp.* 40–50 millim.

4813. Callyna semivitta.

Callyna semivitta, Moore, Lep. Atk. p. 161 (1882); Waterh. Aid, ii. pl. 160. f. 3; Hmpsn. Moths Ind. ii. p. 356.

♀. Head deep chocolate-brown mixed with some white; palpi with the 1st and 2nd joints white in front; thorax chocolate-red, the tegulæ white at base; pectus and legs brown mixed with white, the tibiæ and tarsi ringed with white; abdomen grey-brown, the ventral surface irrorated with white. Fore wing chocolate-red with a purple gloss, irrorated with a few white scales, the base and the area below costa and the upper part of cell thickly irrorated with ochreous white to postmedial line; subbasal line indistinctly double filled in with white, waved, from costa to submedian fold; antemedial line defined on each side by ochreous white, waved, interrupted, obsolete below submedian fold, an oblique white striga before it across the cell; orbicular and reniform with white annuli defined by black, the former with some ochreous scales in centre, its outer edge produced to a streak connected with the reniform, which has an ochreous centre, narrow, rather constricted at middle and slightly angled inwards on median nervure; postmedial line double, filled in with ochreous white, irregularly waved, oblique from costa to vein 4, below vein 3 represented by white points on the veins, a black-brown fascia from it to subterminal line in discal fold; some white points on postmedial part of costa; an apical ochreous-white patch extending onto the cilia at apex and with dark striæ on it at termen and dark wedge-shaped mark before it below costa; the subterminal line represented by an excurved ochreous-white mark below the apical patch and two points in discal fold, then very faint, incurved below vein 3 and with slight dark mark on it at submedian fold; a terminal series of white points. Hind wing fuscous brown with a cupreous gloss; the cilia

greyish intersected with white at the veins and tipped with white between veins 6 and 4; the underside brown irrorated with white, especially on basal half, the inner area greyish, a brown discoidal lunule and diffused medial band, some white on termen between veins 2 and 1.

Hab. Punjab, Kulu (*Hocking*), 1 ♀; Sikhim (*Lidderdale, Atkinson*), 3 ♀ type. *Exp.* 48–66 millim.

4814. Callyna mystica. (Plate CXLV. fig. 11.)

Dinumma mystica, Wlk. xv. 1807 (1858); Hmpsn. Moths Ind. ii. p. 357.

♀. Head and thorax red-brown suffused with purple; pectus greyer; tarsi with slight pale rings; abdomen greyish brown. Fore wing red-brown suffused with purple except the costal area and cell to postmedial line which is fiery red and ochreous mixed; subbasal line represented by an oblique red and ochreous striga from costa; antemedial line defined by ochreous on inner side, angled outwards below costa and inwards on median nervure and vein 1, excurved and obsolescent above inner margin; a slight rufous streak from it to postmedial line in submedian fold; orbicular and reniform very small and almost conjoined, with slight ochreous annuli, the former defined by black below, the latter at sides; postmedial line brown defined on each side by reddish ochreous, oblique from costa to vein 4, then incurved and very minutely dentate, some slight pale points beyond it on costa and a black-brown fascia from it to subterminal line in discal fold; subterminal line slight, reddish ochreous defined on inner side by a dentate black mark below vein 6 and smaller marks below veins 4, 3, excurved below vein 7 and at middle and angled inwards in discal fold, an ochreous white spot beyond it at apex; a series of ochreous white points just before termen. Hind wing dark red-brown; cilia with whitish mixed, and with brown line through them; the underside brown tinged with grey and irrorated with white, a diffused curved postmedial line.

Hab. Burma, Moulmein (*Clerk*), 1 ♀ type. *Exp.* 40 millim.

4815. Callyna obscura, n. sp. (Plate CXLV. fig. 12.)

♀. Head and thorax dark purplish brown mixed with some ochreous; tegulæ ochreous at tips; pectus greyish ochreous; legs brown mixed with grey, the tarsi ringed with white; abdomen dark brown mixed with grey, the ventral surface ochreous irrorated with white. Fore wing dark purplish brown irrorated with grey; subbasal line double, waved, from costa to submedian fold; antemedial line double, waved, oblique; orbicular a round dark spot defined by some white; reniform narrow, slightly defined by whitish; a faint oblique dark shade from lower angle of cell to inner margin; postmedial line dark, oblique and defined on outer side by whitish from costa to vein 4, then incurved, diffused and somewhat dentate, with an oblique blackish shade beyond it from

costa to vein 4 and some pale points on costa; subterminal line indistinct, dark, dentate and defined on outer side by oblique whitish striæ from costa to vein 6, then very indistinct, waved, a yellowish patch beyond it at apex; a fine whitish line at base of cilia. Hind wing dark grey-brown with a cupreous gloss; a fine whitish line at base of cilia; the underside whitish thickly irrorated with brown, the terminal area suffused with brown, a dark discoidal lunule and diffused curved postmedial line.

Hab. Gazaland, Chirinda Forest (*Marshall*), 1 ♀ type. *Exp.* 40 millim.

4816. Callyna monoleuca.

Callyna monoleuca, Wlk. xv. 1667 (1858): Hmpsn. Moths Ind. ii. p. 356.
Leocyma apicalis, Snell. Tijd. v. Ent. xxiii. p. 54, pl. 4. f. 9 (1880).

Head and thorax deep chocolate-brown mixed with a few white scales; white points on sides of basal joint of antennæ and above the eyes; pectus grey; tibiæ and tarsi ringed with whitish; abdomen dark brown tinged with grey, the genital tufts whitish. Fore wing deep chocolate-brown, slightly irrorated with grey; subbasal line slight, ochreous, waved, from costa to submedian fold; antemedial line formed by ochreous points, oblique, waved, almost obsolete on inner half; orbicular slightly defined by dark brown and with ochreous annulus to upper half, round; reniform slightly defined by dark brown with small ochreous spot on its outer edge and some grey points above; postmedial line dark brown with slight ochreous marks on its outer edge and some grey scales on it towards costa, bent outwards below costa, then produced to short dark streaks on the veins, slightly incurved at discal fold, incurved below vein 4; an ochreous white apical spot with dark point on it at costa, the faint dentate subterminal line arising from it defined on outer side by slight ochreous marks. Hind wing fuscous brown with a cupreous gloss; the underside fuscous tinged with grey and slightly irrorated with white, the apex rather darker, a faint diffused dark postmedial line.

Hab. Sikhim, 4 ♀; Assam; Bombay, Kanara (*Ward*), 1 ♀ type, Karwar (*Bell*), 1 ♂; Madras, Nilgiris (*Hampson*), 1 ♂; Ceylon, Trincomali (*Yerbury*), 1 ♂; Burma, Rangoon, 1 ♀, Up. Burma, Pakoko (*Wood*), 1 ♂; Nicobars, Nancowry, 1 ♂; Java (*Horsfield*), 2 ♀; Celebes; Br. N. Guinea, Pt. Moresby, 1 ♀, Ekeikei (*Pratt*), 1 ♂, 3 ♀, Mt. Kebea (*Pratt*), 1 ♂. *Exp.* 36–50 millim.

Larva. Black with the head white.

*4817. Callyna fuscantaria. (Plate CXLV. fig. 13.)

Callyna fuscantaria, Beth.-Baker, Nov. Zool. xiii. p. 218 (1906).

♂. Head and thorax chocolate-brown irrorated with a few white scales; tarsi ringed with white; abdomen dark grey-brown, the ventral surface irrorated with white. Fore wing chocolate-brown with a cupreous gloss especially on terminal area; subbasal

line represented by slight white points on and below costa; antemedial line dark, oblique, waved, with white points on it on and below costa; a dark medial shade excurved at middle; postmedial line slight, dark, minutely dentate, with white point at costa, oblique to vein 4, then erect and incurved at submedian fold; traces of a minutely waved subterminal line excurved below vein 7 and at middle; traces of a rounded apical patch defined by a few white scales. Hind wing dark brown with a cupreous gloss; cilia greyer; the underside brown tinged and irrorated with grey, the inner area greyish, a diffused dark brown bar from middle of costa and postmedial band.

Hab. Br. New Guinea, Ekeikei (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 40 millim.

4818. **Callyna cupricolora.** (Plate CXLV. fig. 14.)

Callyna cupricolor, Hmpsn. Ann. S. Afr. Mus. ii. p. 401 (1902).

♂. Head and thorax dark brown with a purple gloss; pectus and legs greyer, the tarsi slightly ringed with white; abdomen whitish suffused with red-brown and with blackish segmental lines. Fore wing purplish plum-colour, the costal area blackish irrorated with a few white scales, the terminal area and a streak on inner margin except at base crimson-red; traces of dark antemedial line; claviform very elongate and defined by chocolate-brown; orbicular and reniform with slight grey annuli defined by black scales and with streaks of black scales before and between them, the former round, the latter narrow and constricted at middle; postmedial line only represented by minute dark streaks in the interspaces beyond the cell; subterminal line absent; cilia with a fine white line at base. Hind wing white, the veins brownish, a slight diffused brown subterminal shade and fine brown terminal line; the underside with the costal and apical areas irrorated with brown, a discoidal point and postmedial series of minute streaks on the veins.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type, *Exp.* 36 millim.

Genus **OXYTHRES.**

	Type.
Oxythres, Druce, A. M. N. H. (7) v. p. 517 (1900)	*splendens.*

Proboscis fully developed; palpi upturned, the 2nd joint hardly reaching to middle of frons and broadly scaled, the 3rd short; frons with rounded prominence with corneous plate below it; eyes large, round; antennæ of male very minutely serrate and fasciculate; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing long and narrow, the apex rounded, the termen very obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4819. Oxythres splendens.

Oxythres splendens, Druce, A. M. N. H. (7) v. p. 517 (1900).

Head fuscous with some rufous between antennæ; palpi rufous, the 3rd joint black; antennæ tinged with purplish; thorax white tinged with pale purplish brown; pectus in front and legs fuscous, the tarsi ringed with white; abdomen whitish tinged with fuscous, the sides blackish, the anal tuft ochreous. Fore wing pinkish white, the interspaces suffused with chestnut-red except on costal area, deepest in cell and paler towards inner margin and termen, the costal edge red; antemedial line obsolete on costal area, then chestnut, double filled in with whitish, strongly angled outwards in submedian fold, angled inwards on vein 1 and outwards above inner margin; orbicular and reniform with whitish annuli and

Fig. 166.—*Oxythres splendens*, ♂. ½.

white lines in centres, the former oblique elliptical extending to well below cell, the latter rather S-shaped; five lunulate whitish lines on terminal half, obsolete on costal area and oblique below vein 4; a triangular black patch on costa towards apex; cilia whitish. Hind wing pure semihyaline white with some fuscous on costa at apex. Underside of fore wing white, the costal area suffused with pink to subterminal line with fuscous suffusion below it to submedian fold, a diffused curved postmedial line from costa to vein 2, red on costal area, then blackish, a diffused blackish subterminal curved band from costa to vein 2; hind wing with fuscous marks on costa at middle and towards apex.

Hab. Colombia, 1 ♀; Peru, in Coll. Dognin. *Exp.* ♂ 44, ♀ 48 millim. Type † in Coll. Druce.

Genus EUTERPIA.

	Type.
Enterpia, Guen. Ann. Soc. Ent. Fr. 1850, p. 235	*laudeti.*
Euterpia, Guen. Noct. ii. p. 171 (1852)	*laudeti.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint not reaching middle of frons and fringed with rather long hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded; the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4820. Euterpia laudeti.

Cleophana laudeti, Boisd. Gen. & Ind. Meth. p. 152 (1840); Dup. Lép. Fr., Suppl. iv. p. 391, pl. 82. f. 1; Fr. Neue Beitr. pl. 395. f. 1; Herr.-Schäff. Eur. Schmett., Noct. ff. 228–9; Mill. Icones, iii. pl. 128. ff. 1–4; Staud. Cat. Lep. pal. p. 224.
Acontia cretacea, Ev. Bull. Mosc. xx. 3, p. 80, pl. 6. f. 3 (1847).
Euterpia roseomarginata, Calb. Iris, iv. p. 44 (1891).

Head and thorax pure white; palpi fuscous except at extremity of 2nd joint; antennæ tinged with fuscous; tibiæ at base and tips and the tarsi banded with black; abdomen white slightly tinged with fuscous. Fore wing white; the basal area with a patch of purplish brown and bluish white from costa to vein 1; subbasal line represented by black spots on costa and below the cell; antemedial line black, lunulate from costa to above vein 1, then slighter and angled inwards on vein 1; orbicular elliptical, slightly defined by black and open above; reniform brown irrorated with bluish white and defined by black, constricted at middle and angled inwards on median nervure; medial line brownish, waved, excurved at middle,

Fig. 167.—*Euterpia laudeti*, ♂. ½.

the area beyond it suffused with purplish brown to subterminal line; postmedial line double, black filled in with white, the inner line lunulate, bent outwards below costa, then waved, incurved at discal fold and strongly below vein 4, a blackish patch beyond it on costal area with white points on costa; subterminal line formed by the contrast between the postmedial and terminal areas, waved, with black patch on inner margin and slight white lunule above it. Hind wing white, the veins brownish; a diffused slightly waved brownish postmedial band excurved at middle and bent outwards to tornus; the underside with slight dark discoidal lunule, postmedial point on costa and diffused waved subterminal band.

Ab. 1. *roseomarginata*. Fore wing more or less irrorated with pink.

Hab. Switzerland, Valais, Frey Coll.; Tyrol, Leech Coll.; Macedonia; Bulgaria; S. Russia, Zeller and Leech Colls.; Armenia; Asia Minor, Pontus; Syria, Antioch, Mardin; W. Turkestan, Turcomania. *Exp.* 30–36 millim.

Larva. Hffm. Raup. p. 140, pl. 36. f. 6.

Head brown with two dark points above; thoracic shield brown with dark brown marks in front and behind; body yellowish white with the warts brown. Food-plants: *Silene otites* and *wolgensis* and *Gypsophila paniculata*. 5–6.

Genus **DIPINACIA**, nov.

Type, *D. schiniodes.*

Proboscis fully developed; palpi with the 2nd joint upturned, reaching about to middle of frons and moderately scaled, the 3rd moderate, porrect; frons with curved corneous plate below and long rather bilobed plate at middle; eyes large, round; antennæ of female ciliated; thorax clothed with scales and hair mixed, the prothorax without crest, the metathorax with slight spreading crest; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4821. **Dipinacia schiniodes.**

Dipinacia schiniodes, Dogn. Ann. Soc. Ent. Belg. li. p. 239 (1907).

♀. Head and thorax pale ochreous; abdomen ochreous white tinged with brown. Fore wing yellowish white tinged with olive especially on terminal area, the basal inner area faintly tinged with rufous; an indistinct diffused oblique rufous antemedial line from cell to inner margin and with slight olive mark on costa; postmedial line very indistinct, whitish, excurved from costa to vein 5, then oblique, below vein 3 slightly defined by rufous on inner side

Fig. 168.—*Dipinacia schiniodes*, ♀. ½.

and with olive mark at inner margin; subterminal line whitish defined by olive suffusion on inner side, slightly incurved below vein 3. Hind wing white suffused with brown except on basal and inner areas; diffused curved brownish postmedial and subterminal bands. Underside of fore wing suffused with fuscous except on inner area; hind wing white slightly irrorated with brown, a diffused curved postmedial line.

Hab. Argentina, La Rioja (*Giacomelli*), 1 ♀, Tucuman, type† ♀ in Coll. Dognin. *Exp.* 28 millim.

Genus **CYTOTHYMIA**, nov.

Type, *C. obsita.*

Proboscis fully developed; palpi obliquely porrect to just beyond frons and moderately fringed with scales below, the 3rd joint short; frons with large round corneous prominence with raised edges, its lower edge produced

to a trilobate plate, a corneous plate below it; eyes large, round; antennæ of male minutely ciliated; thorax smoothly clothed with scales and without crests; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4822. Cytothymia obsita.

Metoptria obsita, Feld. Reis. Nov. pl. 108. f. 36 (1874).

♂. Head and thorax ochreous mixed with rufous; abdomen ochreous; pectus, legs, and ventral surface of abdomen tinged with rufous and irrorated with brown. Fore wing ochreous irrorated with brown; traces of a waved antemedial line with more distinct spot on costa and striga from inner margin; traces of a round orbicular stigma with grey point in centre; reniform small, greyish with faint ochreous annulus, constricted at middle and expanding below, two brown points above it on costa; an oblique rufous band from

Fig. 169.—*Cytothymia obsita*, ♂. ½.

lower angle of cell to inner margin on inner side of postmedial line, which is rufous defined by ochreous on outer side, with brown point at costa, excurved to vein 4, then incurved; some rufous suffusion on costal area before the strong ochreous subterminal line, which is slightly excurved below vein 7, then oblique and expanding at tornus; terminal area bright rufous; cilia greyish and rufous at base with series of slight dark spots, ochreous at tips with slight dark spots. Hind wing ochreous irrorated with brown, the terminal area tinged with rufous; a faint curved postmedial line and diffused brown subterminal band; cilia brown at base, ochreous at tips. Underside of fore wing reddish yellow irrorated with brown, the whole disk suffused with brown leaving a pale discoidal spot; hind wing yellow irrorated with brown, a diffused brown postmedial band.

♀. Fore wing with the medial band extending to costa; hind wing with more prominent subterminal and terminal brown bands.

Hab. C. Colony, Simons Town (*de la Garde*), 2 ♂, 2 ♀, Cape Town (*Trimen*), 3 ♂, 3 ♀. *Exp.* 26–30 millim.

Genus SYNTHYMIA.

	Type.
Synthymia, Hübn. Verz. p. 282 (1827)	*fixa.*
Metoptria, Dup. Cat. Méth. p. 191 (1844)	*fixa.*

Proboscis fully developed; palpi porrect, short, not reaching as far as frons and fringed with long hair below; frons with trilobate corneous process and corneous plate below it; eyes large, round; antennæ of male minutely ciliated; thorax clothed with hair overlaying scales and without crests; tibiæ moderately fringed with hair; abdomen with some rough hair at base but without crests. Fore wing with the apex rectangular, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing orange with brown terminal band	*fixa.*
B. Hind wing white	*exsiccata.*

4823. Synthymia fixa.

Noctua fixa, Fabr. Ent. Syst. iii. 2, p. 46 (1794).
Noctua monogramma, Hübn. Eur. Schmett., Noct. f. 353 (1808); Godt. Lép. Fr. v. pl. 51. ff. 4, 5; Mill. Icones, pl. 144. ff. 12, 14; Staud. Cat. Lep. pal. p. 240.

Head and thorax dark red-brown mixed with olive-ochreous; pectus, legs, and abdomen olive-ochreous irrorated with brown, the tarsi with slight pale rings. Fore wing olive-ochreous thickly irrorated with red-brown, the outer part of medial area and the

Fig. 170.—*Synthymia fixa*, ♂. ½.

terminal area suffused with red-brown; a faint pale curved antemedial line slightly defined on each side by red-brown; orbicular and reniform whitish, the former narrow, erect elliptical, the latter narrow, constricted at middle and angled inwards on median nervure, and both with small dark marks in upper and lower parts; a faint dark medial line defining the inner side of brown area and slightly angled outwards on median nervure; postmedial line faint, brown, oblique from costa to vein 4, then incurved; a strong yellowish-white subterminal line, oblique to vein 3, then incurved; a slight brown terminal line; cilia with a slight brown line through them. Hind wing deep orange, the base and inner area suffused with brown; a terminal brown band expanding towards costa and

narrowing to a point at tornus with small brown spots before it in submedian fold and above tornus: cilia ochreous mixed with brown and with a brown line through them. Underside of fore wing orange slightly suffused with brown in parts, a discoidal point, indistinct subterminal line, and slight streaks on the veins of terminal area; hind wing with the costal and terminal areas slightly irrorated with brown, a faint subterminal line.

Ab. 1. Hind wing with diffused medial and postmedial brown bands.

Ab. 2. Hind wing almost wholly suffused with brown.

Hab. S. France, Sand Coll.; Spain, Zeller, Frey, and Leech Colls., Cadiz (*Walsingham*), Gibraltar (*Yerbury*); Corsica, Pont du Garde (*Yerbury*); Italy, Liguria; Sicily, Leech Coll.; ? Dalmatia; Malta (*Bainbrigge-Fletcher*), 1 ♂, 1 ♀; Algeria. *Exp.* 34–36 millim.

Larva. Kirby, Butt. & Moths Eur. p. 290; Hffm. Raup. p. 144, pl. 36. f. 19.

Green with yellow dorsal and lateral lines. Food-plant, flowers of *Psoralea bituminosa*. 6.

*4824. Synthymia exsiccata.

Synthimia exsiccata, Warr. Nov. Zool. xii. p. 25, pl. iv. ff. 19, 30 (1905).

♂. Head and thorax white tinged with reddish ochreous; abdomen white faintly tinged with ochreous. Fore wing white tinged with reddish ochreous; traces of a rufous antemedial line with more prominent rufous point in submedian fold; traces of small whitish orbicular and reniform stigmata; postmedial line whitish, slightly bent outwards below costa, incurved below vein 4 and defined on inner side by a rufous shade below vein 2; a faint whitish subterminal line slightly defined by rufous on inner side and slightly incurved below vein 3; a terminal series of slight rufous points. Hind wing almost pure white, the underside with the costal area faintly tinged with ochreous.

Hab. Sudan, Merawi, type † ♂ in Coll. Rothschild. *Exp.* 30 millim.

Genus **MEGALODES**.

	Type.
Megalodes, Guen. Noct. ii. p. 261 (1852)	*eximia*.

Proboscis fully developed; palpi obliquely upturned and reaching about to middle of frons, the 2nd joint moderately fringed with hair in front, the 3rd rather long; frons with large round corneous prominence with raised edges, its lower edge produced to a large trilobate plate, a corneous plate below it; eyes large, round; antennæ of male laminate and serrate; thorax clothed with rough hair and hair-like scales and without crests; tibiæ fringed with rather long hair; abdomen without crests. Fore wing with the apex somewhat produced and acute, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4825. Megalodes eximia.

Cosmia eximia, Frr. Neue Beitr. v. p. 104, pl. 442. f. 3 (1884); Herr.-Schäff. Eur. Schmett., Noct. f. 399 (1849); Guen. Noct. ii. p. 261, pl. 10. f. 16; Staud. Cat. Lep. pal. p. 240.

Head and thorax olive-green mixed with whitish; abdomen ochreous dorsally suffused with pale olive-green. Fore wing olive-green suffused over whitish; the veins slightly streaked with whitish; a narrow obliquely curved greenish-white antemedial band; reniform slightly defined by whitish, expanding above and narrowing below; a narrow greenish-white postmedial band, oblique from costa to vein 7, then inwardly oblique and slightly

Fig. 171.—*Megalodes eximia*, ♂. ½.

incurved; a narrow greenish-white subterminal band, slightly excurved below costa, then oblique; a fine whitish terminal line; cilia intersected with whitish. Hind wing whitish suffused with pale red-brown; cilia whitish slightly tinged with brown. Underside of fore wing brown, the costal and apical part of terminal area whitish irrorated with olive-green; hind wing white slightly irrorated with olive-green, traces of a diffused curved postmedial line.

Hab. Armenia; Asia Minor, Pontus, 1 ♂, 1 ♀, Lydia (*Lederer*), 3 ♂, 3 ♀, Taurus, Amanus Mts., 1 ♀; Syria, 1 ♂, 1 ♀, Mardin; Kurdistan. *Exp.* 34–40 millim.

Larva. Kirby, Butt. & Moths Eur. p. 290; Hffm. Raup. p. 144.

Thick; yellowish green with small whitish warts and dark red-brown points; head yellow-brown; thoracic shield dark brown. Food-plant, *Malvus*. 7.

Genus NARTHECOPHORA.

Type.

Narthecophora, Smith. Proc. U.S. Nat. Mus. xxii. p. 485 (1900)... *pulverea*.

Proboscis aborted, small; palpi obliquely upturned, very short, the 2nd joint fringed with hair in front; frons with large trifid corneous process, the middle point long with ridge above, a curved corneous plate below it; eyes large, round; antennæ of male laminate; thorax clothed with hair and scales mixed and without crests; fore tibiæ short with curved claw on outer side, the mid and hind tibiæ slightly fringed with hair; abdomen without crests. Fore

wing long and narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell, Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

*4826. Narthecophora pulverea.

Narthecophora pulverea, Smith, Proc. U.S. Nat. Mus. xxii. p. 486 (1900); Dyar, Cat. Lep. N. Am. p. 197.

♂. Head, thorax, and abdomen pale ochreous greyish tinged with red-brown; tarsi browner slightly ringed with white. Fore wing grey-white thickly irrorated with pale red-brown: antemedial line rather diffused red-brown, slightly bent inwards to costa and incurved at vein 1; a small whitish discoidal lunule defined by red-brown; postmedial line rather diffused red-brown, slightly

Fig. 172.—*Narthecophora pulverea*, ♂. ½.

excurved below costa, incurved at discal fold to reniform, strongly incurved below vein 4 and excurved at vein 1; subterminal line hardly traceable, brownish, excurved below vein 7 and at middle and with brownish shade beyond it at apex. Hind wing ochreous white faintly tinged with red-brown; the underside suffused with rufous.

Hab. U.S.A., Arizona, Tucson (*Schwarz*), in U.S. Nat. Mus. *Exp.* 28 millim.

Genus AZENIA.

	Type.
Azenia, Grote, Papilio, ii. p. 186 (1882)	*implora*

Proboscis aborted, small; palpi obliquely upturned, slender, reaching to just beyond frontal process; frons with rounded prominence with large trilobate corneous plate at middle and corneous plate below it with straight outer edge; eyes large, round; antennæ of male typically laminate and minutely ciliated; thorax clothed with scales and hair mixed and without crests; tibiæ smoothly scaled; abdomen without crests. Fore wing rather long and narrow, the apex rounded, the termen evenly curved and no crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with moderate branches, the apex serrate; frontal process with three moderate lobes; palpi with the 3rd joint rather long.

4827. Azenia vatersi.

Megalodes watersi, N. C. Roths. Nov. Zool. viii. p. 430 (1901).

♂. Head and thorax white tinged with ochreous brown; abdomen white dorsally tinged with ochreous. Fore wing white suffused with ochreous brown, darker towards the indistinct obliquely curved antemedial line and on the narrow postmedial

Fig. 173.—*Azenia vatersi*, ♂. ½.

area; postmedial line white slightly defined by brown on inner side, excurved from costa to vein 4, then oblique; subterminal line whitish, slightly excurved from costa to vein 3, then slightly incurved; a fine brown terminal line. Hind wing yellowish white.

Hab. Egypt, type† in Coll. Rothschild; Aden (*Yerbury*), 1 ♂. *Exp.* 30 millim.

Sect. II. Antennæ of male serrate; frontal process with three moderate lobes; palpi with the 3rd joint rather long.

A. Fore wing with antemedial, medial, postmedial, and terminal olive-green bands ..... *tusa.*
B. Fore wing with ante- and postmedial yellow-brown lines ..... *pura.*

4828. Azenia tusa.

Megalodes tusa, Swinh. A. M. N. H. (7) ix. p. 168 (1902).

Head and thorax white, the latter slightly mixed with rufous; palpi at sides and lower part of frons tinged with ochreous; tarsi banded with ochreous brown; abdomen white suffused with ochreous. Fore wing pure white with slight olive-green basal and subbasal marks on costa; a subbasal black point in cell; an antemedial olive-green point on costa and a diffused oblique band from subcostal nervure to vein 1; a small black-brown discoidal lunule; an oblique medial olive-green band from cell to vein 1; an oblique postmedial olive-green band, narrowing to costa; a narrow diffused olive-green terminal band and a fine brownish terminal line; cilia with diffused brownish line near base, the tips slightly tinged with

rufous. Hind wing white; a faint brownish discoidal bar, a diffused oblique postmedial band with sinuous outer edge and

Fig. 174.—*Azenia tusa*, ♂. ½.

narrow terminal band from apex to vein 2; the underside white with the costa faintly tinged with ochreous, a small dark discoidal spot.

Hab. W. Australia, Sherlock R. (*Clements*), 3 ♂, 4 ♀ type. *Exp.* 16–30 millim.

4829. Azenia pura.

Megalodes pura, Swinh. A. M. N. H. (7) ix. p. 82 (1902).

♀. Head and thorax white; frons tinged with ochreous; fore femora and tibiæ brown on inner side, the tarsi banded with brown; abdomen white, dorsally tinged with ochreous. Fore wing pure white; antemedial line ochreous and brown, formed by a striga in cell and slightly waved and incurved line from cell to inner margin; postmedial line formed of ochreous and brown striæ, arising at vein 7 and incurved below vein 4; a terminal series of slight brown points. Hind wing white, the terminal half tinged with brown from costa to vein 3; a slight punctiform terminal brown line from apex to vein 2.

Hab. W. Australia, Sherlock R. (*Clements*), 1 ♀. *Exp.* 32 millim. Type † in Mus. Oxon.

Sect. III. Antennæ of male laminate and ciliated.

A. Frontal process produced to three long points.

4830. Azenia implora.

Azenia implora, Grote, Papilio, ii. p. 186 (1882); Smith, Cat. Noct. N. Am. p. 302.

Head and thorax pale yellow; palpi above, sides of frons, and antennæ tinged with rufous; legs tinged with rufous; abdomen pale yellow, dorsally slightly tinged with rufous towards base. Fore wing pale yellow with a faint rufous tinge on basal and costal areas; a subbasal rufous point on costa; a small antemedial rufous

spot on costa and brown point further from base in submedian fold; a faint diffused rufous medial line, more distinct towards costa and oblique below the cell; a faint punctiform rufous postmedial line with more distinct point on costa and dark points in discal and

Fig. 175.—*Azenia implora*, ♂. ½.

submedian folds, bent outwards below costa, slightly angled inwards in discal fold and incurved below vein 3; traces of a curved subterminal punctiform rufous line and of a terminal series of rufous points. Hind wing white, the underside with the costal area tinged with yellow.

Hab. U.S.A., New Mexico, Mesilla (*Cockerell*), 2 ♀, Arizona, Phœnix (*Barnes*), 1 ♀, Nogales (*Oslar*), 2 ♂, 2 ♀. *Exp.* 22–26 millim.

B. Frontal process produced to a triangular lobe at middle and slight points at sides.

4831. Azenia edentata.

Azenia edentata. Grote, Can. Ent. xv. p. 25 (1883); Smith, Cat. Noct. N. Am. p. 302.

♀. Head and thorax ochreous yellow; fore legs tinged with brown, the tarsi tinged with ochreous; abdomen ochreous yellow, the ventral surface paler. Fore wing deep yellow with a small

Fig. 176.—*Azenia edentata*, ♀. ½.

purplish-brown spot on costa just beyond middle. Hind wing pale yellow tinged with brown, the termen rather deeper yellow; traces of a sinuous postmedial line. Underside of fore wing tinged with brown except the termen.

Hab. U.S.A., New Mexico, Sapello Cañon (*Oslar*), 1 ♀, Arizona. *Exp.* 26 millim.

Genus **PARÆGLE**, nov.

Type, *P. ochracea*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and rather broadly fringed with scales in front, the 3rd moderate, porrect; frons with long pointed corneous process connected by a keel with the plate below it which is produced to three points in front and two lateral points below; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales and without crests; tibiæ smoothly scaled, the fore tibiæ with small claws on inner and outer sides; abdomen without crests. Fore wing with the apex rounded, the termen rather obliquely curved and not crenulate: veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 stalked in male, from cell in female; 5 obsolescent from well below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell to one third.

4832. Parægle ochracea.

Metoponia ochracea, Ersch. Fedtsch. Reis. p. 53, pl. 3. f. 52 (1874); Staud. Cat. Lep. pal. p. 233.
Metoponia subochracea, Staud. Iris, iv. p. 324 (1891).

Head and thorax yellow; palpi above and antennæ tinged with rufous; abdomen yellow dorsally tinged with ochreous. Fore wing yellow; the costal edge tinged with rufous; a rather narrow rufous postmedial band from costa towards apex, oblique below vein 7; cilia rufous. Hind wing yellowish white; a rather indistinct and diffused postmedial rufous line, excurved below costa, then oblique; the termen tinged with rufous from apex to vein 4;

Fig. 177.—*Parægle ochracea*, ♂. ½.

a fine brown terminal line. Underside of fore wing tinged with red-brown except the margins; hind wing uniform yellowish white.

Ab. 1. *subochracea*. Smaller; fore wing with the markings slight or almost obsolete; hind wing often paler.

Hab. Syria, Mardin; W. Turkestan, Turcomania (*Erschoff*), 1 ♀, Tedschen Oasis (*Hauser*), 1 ♂. *Exp.* ♂ 24, ♀ 26 millim.

Genus **METÆGLE**, nov.

Type, *M. pallida*.

Proboscis fully developed; palpi obliquely porrect, extending to just beyond the frons and moderately fringed with hair; frons with large pointed prominence covered with hair with trilobate corneous plate below it; eyes large, round; antennæ of male minutely ciliated; thorax clothed almost entirely with

scales and without crests: fore tibiæ with small spine on inner side at extremity covered with hair, the tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate, veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4833. Metægle pallida.

Metoponia pallida, Staud. Iris, iv. p. 323 (1891); id. Cat. Lep. pal. p. 233.

♂. Head and thorax yellowish white; abdomen fulvous yellow, the anal tuft yellowish white. Fore wing pale yellow slightly tinged with reddish towards termen; a red-brown spot on costa towards apex; cilia red-brown at base, pure white at tips. Hind

Fig. 178.—*Metægle pallida*, ♂. ½.

wing pale yellow slightly tinged with reddish towards termen; cilia pale reddish yellow at base, pure white at tips; the underside white with the costal and terminal areas tinged with yellow.

Hab. Syria, Mardin, 1 ♂, 1 ♀; Mesopotamia. *Exp.* 24 millim.

Genus ÆGLE.

	Type.
Ægle, Hübn. Verz. p. 257 (1827)	*cæceritziana.*
Metoponia, Dup. Cat. Méth. p. 187 (1844)	*cæceritziana.*

Proboscis fully developed; palpi obliquely upturned, short and hardly reaching to middle of frons, slender; frons with large rounded prominence with long bilobed process from middle and curved corneous plate below it produced to a point at middle; eyes large, round; antennæ of male minutely ciliated; thorax smoothly clothed with hair and scales and without crests; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex somewhat produced, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole: 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing tinged with yellow.
  a. Hind wing yellow with postmedial and terminal red brown lines..... *vespertalis.*
  b. Hind wing entirely fuscous brown.
    a^1. Fore wing with postmedial line.
      a^2. Fore wing with antemedial line.

a^3. Fore wing with medial red-brown band from cell to inner margin ..... *nubila*.
b^3. Fore wing without medial band ..... *subflava*.
b^2. Fore wing without antemedial line ..... *agatha*.
b^1. Fore wing without postmedial line ..... *cæcerítziana*.
B. Fore wing flesh-coloured ..... *hedychroa*.

4834. Ægle vespertalis.

Pyralis vespertalis, Hübn. Eur. Schmett., Pyr. f. 159 (1818); Staud. Cat. Lep. pal. p. 233.
Anthophila vespertina, Treit. Schmett. Eur. v. 3, p. 280 (1825); Herr.-Schäff. Eur. Schmett., Noct. pl. 51. f. 260.
Leucania vespertinalis, Rmbr. Cat. Lep. S. And. pl. 8. f. 4 & pl. 15. f. 2 (1858).
Leucania matutinalis, Rmbr. Cat. Lep. S. And. pl. 8. f. 5 (1858).

Head and thorax pale yellow slightly tinged with rufous, the sides of palpi and frons, the pectus and legs strongly tinged with rufous; abdomen pale yellow tinged with brown. Fore wing pale yellow; the basal costal area tinged with rufous and the costal edge rufous; a faint rufous medial shade, oblique below the cell and obsolete below vein 1; a slight oblique red-brown discoidal striga; an indistinct rufous postmedial line excurved below costa and at middle and incurved below vein 4; subterminal line slight, rufous, with wedge-shaped rufous mark from costa, then curved and minutely waved; a deep rufous terminal line; cilia deep rufous mixed with yellow and with deep rufous lines at middle and tips. Hind wing pale yellow suffused with rufous except on inner area; an obliquely curved diffused postmedial line; a fine rufous terminal line; cilia pale yellow tinged with rufous except towards tornus and with slight rufous line at middle. Underside of fore wing rufous, the inner area whitish, the basal half of costa yellowish and yellowish marks on it beyond middle and towards apex, slight yellowish marks beyond lower angle of cell and a subapical patch; hind wing yellowish white with diffused rufous band from costa to median nervure, slight waved postmedial line from costa to vein 5, apical patch and subterminal line between veins 6 and 2.

Ab. 1. Fore wing with indistinct antemedial line from costa to vein 1, the medial shade and postmedial lines much more prominent, a brown shade on termen from below apex to tornus; hind wing wholly suffused with brown.

Hab. Hungary, Carniola; Spain, Andalusia, Zeller and Leech Colls., Cadiz (*Walsingham*); Italy, Capri (*C. S. Brown*); Sicily, Zeller Coll.; Dalmatia, Zeller Coll.; Greece; Algeria; Rumelia; Armenia; Asia Minor, Pontus, Bithynia, Taurus; Syria, Mardin; Persia, 2 ♂, 4 ♀. *Exp.* 26–30 millim.

4835. Ægle nubila. (Plate CXLV. fig. 15.)

Metoponia nubila, Staud. Iris, iv. p. 326 (1891); id. Cat. Lep. pal. p. 233.

♀. Head and thorax pale yellow with a few dark brown scales; tarsi red-brown ringed with white; abdomen pale yellow tinged

with fulvous. Fore wing pale yellow irrorated with a few brown scales; obliquely placed subbasal brown points on costa and in cell; antemedial line double, red-brown, rather punctiform, oblique from costa to median nervure, then erect, the orbicular represented by a black point just beyond it; reniform defined by blackish below, very incompletely defined above, constricted at middle; medial line represented by an oblique red-brown bar from costa and red-brown band from cell to inner margin on inner side of the postmedial line, which is double, excurved below costa, then oblique and almost straight; postmedial area tinged with brown defining the subterminal line, which is slightly excurved below vein 7 and at middle; cilia red-brown mixed with yellow, with a slight yellow line at middle, the tips chequered fuscous and yellow. Hind wing yellow suffused with cupreous brown; cilia pale yellow with some red-brown at base; the underside white slightly ringed and irrorated with red-brown, traces of a minutely waved brown postmedial line from costa to vein 5.

Hab. Syria, Diabekir, 1 ♀, Mardin. *Exp.* 28 millim.

4836. Ægle subflava. (Plate CXLV. fig. 16.)

Metoponia subflava, Ersch. Fedtsch. Reis. p. 52, pl. 3. f. 15 (1874); Staud. Cat. Lep. pal. p. 233.

Head and thorax yellowish white; legs tinged with brown; abdomen white tinged with ochreous except at base and extremity. Fore wing yellowish white sparsely irrorated with reddish brown, the costal edge brown towards base; a faint brown antemedial line, very oblique from cell to vein 1 and bent outwards to inner margin; a diffused rufous patch in end of cell and a whitish discoidal mark; postmedial line rufous, arising from costa towards apex, excurved below costa, then very oblique and slightly excurved at median nervules, a triangular rufous patch beyond it on costa; a diffused rufous subterminal band from vein 5 to inner margin; a diffused rufous terminal line; cilia yellowish white with rufous lines at middle and tips. Hind wing whitish suffused with red-brown especially on terminal area; cilia white with slight brown line through them on costal half. Underside of fore wing suffused with brown, the costa white expanding beyond middle and ending in a point before apex, a triangular white patch on apical part of termen; hind wing wholly white.

Hab. W. Turkestan, Turcomania (*Erschoff*), 1 ♀, Tedschen Oasis (*Hauser*), 2 ♂, Sarawschan, Issyk-Kul. *Exp.* ♂ 26, ♀ 30 millim.

*4837. Ægle agatha.

Metoponia agatha, Staud. Stett. ent. Zeit. 1861, p. 289; Mill. Icones, i. pl. 38. ff. 1, 2; Staud. Cat. Lep. pal. p. 233.

♂. Head and thorax orange-yellow, the latter with some white on vertex; antennæ blackish towards tips; pectus and legs whitish,

the tarsi tinged with yellow and brown; abdomen dark brown mixed with some ochreous white, the anal tuft rufous at sides. Fore wing chalky white tinged with yellow, the costal area slightly irrorated with brown; a diffused red-brown line from costa just before apex where it forks to middle of inner margin, oblique to vein 4 at lower angle of cell, then slightly incurved; traces of a diffused waved subterminal red-brown line, the veins beyond it streaked with brown; a dark brown terminal line; cilia white mixed with red-brown. Hind wing dark reddish brown, the cilia white; the underside bluish white, the veins streaked with dark brown, a brown terminal line expanding into diffused marks at apex and veins 5 and 2.

Hab. Greece, Morea in Coll. Püngeler. *Exp.* 30 millim.

4838. Ægle cœceritziana.

Tortrix kœkeritziana, Hübn. Tort. f. 163 (1797); Staud. Cat. Lep. pal. p. 233.
Anthophila flavida, Ochs. Schmett. Eur. iv. p. 93 (1816); Dup. Lép. Fr. Suppl. iii. p. 537, pl. 45. f. 4; Frr. Neue Beitr. iii. pl. 227.
Noctua flava, Hübn. Eur. Schmett., Noct. f. 453 (1818); Friv. Magyar. Tud. Tars. Evkon. xi. p. 167, pl. viii. f. 2.
Metoponia subfumata, Staud. Iris, iv. p. 324 (1891).

Head and thorax very pale yellow, the palpi, frons, and antennæ slightly tinged with rufous; legs suffused with rufous; abdomen whitish suffused with brown. Fore wing very pale yellow; the costal edge rufous towards base; a brown discoidal point; cilia

Fig. 179.—*Ægle cœceritziana*, ♂. ½.

red-brown at base except towards tornus, white at tips. Hind wing red-brown, the inner area whitish suffused with red-brown; cilia white tinged with rufous at base and with slight rufous line through them from apex to submedian fold. Underside of fore wing red-brown, the inner area whitish, some yellowish suffusion on costa and an oblique white subapical mark; hind wing white slightly tinged with rufous in parts and with diffused rufous subterminal marks on costa and in discal fold.

Ab. 1. *subfumata*. Fore wing without the dark discoidal point; hind wing paler fuscous.

Hab. Austria, Leech Coll.; Hungary, Frey and Leech Colls.; Dalmatia; Balkan States; S. Russia, Sarepta (*Christoph*), Zeller Coll.; Armenia; Asia Minor, Pontus, Taurus. *Exp.* 30 millim.

Larva. Kirby, Butt. & Moths Eur. p. 290; Hffm. Raup. p. 144, pl. 36. f. 18. Yellow, with broad grey dorsal and lateral stripes; stigmata black; head brown; thoracic shield dark with yellowish dorsal line. Food-plant, *Delphinium*. 7–8.

*4839. Ægla hedychroa. (Plate CXLV. fig. 17.)

Megalodes hedychroa, Turner, Tr. R. Soc. S. Austr. xxviii. p. 218 (1904).

♂. Head and thorax flesh-white, some black on vertex of head and tegulæ; palpi black at sides; tarsi banded with black; abdomen pale ochreous brown. Fore wing flesh-white; a black point at base of costa; a subbasal black line from costa to submedian fold slightly angled inwards at median nervure; an irregularly waved antemedial line with black patch before it on costa and in cell and two black points above vein 1; a brownish maculate medial band developed into a patch on inner area; reniform brownish, elliptical; postmedial line waved, arising from a small spot on costa, bent outwards below costa, excurved to vein 4, then incurved; subterminal line brownish, maculate, angled outwards at vein 7 and excurved at middle with a black patch before it from costa to vein 6 and a pale point on it at costa, two black spots before it above and below vein 2 and fuscous spots beyond it at discal fold and tornus. Hind wing ochreous brown; the underside paler with slight discoidal lunule and curved postmedial line.

Hab. Queensland, Dalby, type † ♂ in Coll. Turner. *Exp.* 24 millim.

Genus ANTAPLAGA.

	Type.
Antaplaga, Grote, Can. Ent. ix. p. 70 (1877)	*dimidiata.*
Eulithosia, H. Edw. Papilio, iv. p. 43 (1884)	*composita.*

Proboscis fully developed; palpi porrect extending to just beyond the frons and moderately fringed with hair below; frons with truncate corneous prominence with raised edges and central process and corneous plate below it; eyes large, round; antennæ of male minutely ciliated; thorax smoothly clothed almost entirely with scales and without crests; tibiæ smoothly scaled, the fore tibiæ short with long curved claw on inner side at extremity; build slender; abdomen without crests. Fore wing long and narrow, the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 rather slight from below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base, then approximated to it to near middle.

A. Fore wing silvery green ..... *pyralina.*
B. Fore wing orange.
  a. Fore wing with double ante- and postmedial black lines... *dela.*
  b. Fore wing without ante- and postmedial lines.
    a^1. Fore and hind wings with the cilia deep orange..... *salacon.*
    b^1. Fore and hind wings with the cilia pale ..... *composita.*
C. Fore wing pale yellowish to white.
  a. Fore wing with the terminal half suffused with fuscous brown ..... *dimidiata.*

b. Fore wing with the terminal half not suffused with brown.
  a^1. Fore wing with ante- and postmedial black lines.
    a^2. Fore wing with subterminal series of small black spots.
      a^3. Fore wing pale yellow, the medial area white. .... *hachita.*
      b^3. Fore wing wholly white .... *sexseriata.*
    b^2. Fore wing without subterminal series of small black spots ..... *biundulalis.*
  b^1. Fore wing without ante- and postmedial black lines.
    a^2. Hind wing white tinged with ochreous ..... *thoracica.*
    b^2. Hind wing suffused with fuscous.
      a^3. Fore wing tinged with yellow.
        a^4. Head and thorax entirely orange-yellow; fore wing suffused with olive-brown ..... *subfumosa.*
        b^4. Head and thorax with white mixed; fore wing not suffused with olive-brown ..... *dulcita.*
      ^{3}. Fore wing pure white..... *pyronœa.*

*1840. **Antaplaga pyralina.** (Plate CXLV. fig. 18.)

Tarache pyralina, Schaus, Trans. Am. Ent. Soc. xxx. p. 159 (1904).

♂. Head and thorax white largely mixed with dark olive-brown; palpi white at base, brown at tips; tarsi brown ringed with white; abdomen brown with slight whitish segmental rings, the anal tuft ochreous at extremity. Fore wing silvery greenish white irrorated with black-brown; the costal edge brown towards base; antemedial line black-brown defined by white on inner side, dentate; orbicular a small round silvery-white spot defined by black; reniform a white bar with black line in centre; medial line black-brown, oblique from costa to reniform, then inwardly oblique; postmedial line black-brown defined by silvery white on outer side, minutely dentate, oblique towards costa, angled inwards in discal fold and oblique below vein 5, followed by a white point on costa and oblique white bar towards apex; obliquely placed subterminal white spots below veins 7 and 6, a spot below vein 4, and curved band from vein 3 to tornus; a black terminal line with series of small white lunules before it; cilia chequered brown and white. Hind wing whitish suffused with brown; a curved white postmedial band, expanding to inner margin; a subterminal series of white spots from vein 4 to tornus; a fine dark terminal line with series of slight whitish points before it; cilia white intersected with brown; the underside white, the veins brownish especially towards termen, a small blackish discoidal lunule, diffused sinuous postmedial line, diffused waved subterminal band, black terminal line, and blackish spot just below apex.

Hab. Mexico, Guadalajara (*Schaus*), type † ♂ in U.S. Nat. Mus. *Exp.* 36 millim.

4841. Antaplaga dela.

Acontia dela, Druce, A. M. N. H. (6) xiii. p. 361 (1904); id. Biol. Centr.-Am., Het. ii. p. 492, pl. 94. f. 29.

♀. Head and thorax orange; antennæ black-brown; legs black-brown, the tarsi ringed with orange; abdomen brownish ochreous. Fore wing orange; antemedial line double, black, slightly angled outwards below costa, then oblique and slightly sinuous; orbicular and reniform defined by black, the former large, irregularly rounded, the latter narrow and constricted at middle, some black irroration in cell before and between them; an oblique black bar from costa to reniform and strongly incurved dentate line from lower angle of cell to inner margin; postmedial line double, black, minutely dentate, incurved at discal fold, angled outwards at veins 4, 3, then incurved; cilia intersected with black. Hind wing black-brown; cilia pale yellow with series of black-brown spots at base. Underside of fore wing fuscous with the costa except towards base and apex orange, a small yellow spot in middle of cell; hind wing fuscous with the costal edge yellowish.

Hab. Mexico, Durango (*Becker*), 1 ♀ type, Godman-Salvin Coll. *Exp.* 32 millim.

4842. Antaplaga salacon.

Grotella salacon, Druce, A. M. N. H. (6) xvi. p. 39 (1895); id. Biol. Centr.-Am., Het. ii. p. 489, pl. 94. f. 18.

Head and thorax deep orange; palpi brown; antennæ pale brown; pectus ochreous white; legs brown; abdomen pale fulvous yellow. Fore wing uniform deep orange. Hind wing pale orange-yellow, the cilia rather deeper orange. Underside of fore wing with the disk tinged with fuscous.

Hab. Mexico, Guerrero (*H. H. Smith*), 1 ♂, 1 ♀ type, Godman-Salvin Coll. *Exp.* 30 millim.

*4843. Antaplaga composita. (Plate CXLV. fig. 19.)

Eulithosia composita, H. Edw. Papilio, iv. p. 44 (1884); Smith, Cat. Noct. N. Am. p. 266.

♀. Head and thorax orange, fore tibiæ and tarsi fuscous; abdomen paler. Fore wing uniform, very glossy orange, the cilia paler. Hind wing paler, the disk tinged with fuscous; the cilia paler. Underside of fore wing suffused with fuscous leaving the costal and terminal areas orange.

Hab. U.S.A., Arizona. *Exp.* 22 millim. This species is unknown to me; figured from a drawing from type in Coll. Brooklyn Soc. Arts and Sciences.

4844. Antaplaga dimidiata.

Antaplaga dimidiata, Grote, Can. Ent. ix. p. 71 (1877); Smith, Cat. Noct. N. Am. p. 265.

♂. Head and thorax pure white; abdomen white dorsally ringed with yellow. Fore wing with the basal area pure white to near middle with oblique waved outer edge; the terminal half

Fig. 180.—*Antaplaga dimidiata*, ♂. ½.

cupreous brown with diffused white subterminal band; cilia white. Hind wing white suffused with pale brown; cilia white. Underside of fore wing suffused with brown; hind wing white.

Hab. U.S.A., Colorado, 1 ♂ type. *Exp.* 30 millim.

*4845. Antaplaga hachita. (Plate CXLV. fig. 20.)

Antaplaga hachita, Barnes, Can. Ent. xxxvi. p. 241 (1904).

♀. Head and thorax chrome-yellow; abdomen yellowish white. Fore wing bright chrome-yellow, the medial area creamy white; antemedial line black, erect, slightly angled outwards below costa, on median nervure and above inner margin; postmedial line black, slightly incurved below costa, excurved to lower angle of cell, then erect; a subterminal series of small black spots in the interspaces, the 2nd and 3rd from costa obsolescent, smaller towards inner margin; cilia pale yellow. Hind wing ochreous white, slightly darker towards termen; traces of a postmedial band towards costa. Underside of fore wing blackish except costal and inner areas; hind wing yellowish white.

Hab. U.S.A., Arizona, Sta Catalina Mts. *Exp.* 24 millim. This species is unknown to me; figured from a drawing from type in Coll. W. Barnes.

4846. Antaplaga sexseriata. (Plate CXLV. fig. 21.)

Grotella sexseriata, Grote, Papilio, i. p. 155 (1881); id. Ill. Essay, p. 61, pl. 3. f. 29; Smith, Cat. Noct. N. Am. p. 265.

♂. Head and thorax white tinged with ochreous; legs tinged with fuscous; abdomen ochreous. Fore wing pure white; the costal edge fuscous towards base; antemedial line strong, black, excurved from costa to below cell, slightly angled inwards in submedian fold, then erect; postmedial line strong, black, obliquely

incurved below vein 7; a subterminal series of rather triangular black spots slightly angled outwards below vein 7. Hind wing ochreous yellow tinged with fuscous brown; cilia yellowish white. Underside of both wings yellow suffused with fuscous brown.

Hab. U.S.A., Arizona, 1 ♂ type. *Exp.* 30 millim.

4847. **Antaplaga biundulalis.** (Plate CXLV. fig. 22.)

Sedenia biundulalis, Zell. Verh. zool.-bot. Ges. Wien, 1872, p. 502, pl. iii. f. 14.

Antaplaga biundulata, Smith, Cat. Noct. N. Am. p. 265 (1893).

♀. Yellowish white; palpi and legs tinged with brown; abdomen tinged with ochreous. Fore wing with strong somewhat oblique, slightly and irregularly waved black antemedial line; postmedial line strong, black, minutely waved, excurved from costa to vein 5, then incurved. Underside of fore wing suffused with brown except the costa and inner area.

Hab. U.S.A., Texas (*Boll*), 2 ♀ type. *Exp.* 26 millim.

4848. **Antaplaga thoracica.** (Plate CXLV. fig. 23.)

Eulithosia thoracica, H. Edw. Papilio, iv. p. 44 (1884); Smith, Cat. Noct. N. Am. p. 266.

♂. Head and tegulæ orange; palpi fuscous except basal joint; antennæ ochreous white above, fuscous below; thorax ochreous white tinged with orange; pectus and legs suffused with fuscous; abdomen ochreous white tinged with brown, the ventral surface fuscous. Fore and hind wings uniform silvery white tinged with ochreous. Underside of fore wing suffused with fuscous leaving the costal area whitish except towards base; hind wing whitish tinged with fuscous.

Hab. U.S.A., Arizona, in Coll. J. B. Smith; Mexico, 1 ♂. *Exp.* 32 millim.

*4849. **Antaplaga suffumosa.** (Plate CXLVIII. fig. 17.)

Antaplaga subfumosa, Dyar, Proc. Ent. Soc. Wash. xi. p. 25 (1909).

♂. Head and thorax deep orange; pectus, legs, and abdomen whitish tinged with fuscous brown. Fore wing greyish ochreous tinged with olive-brown except towards costa and apex. Hind wing whitish tinged with fuscous especially on costal half; the cilia pale; the underside pale, the costal area tinged with fuscous.

Hab. Mexico, Mexico City (*Müller*). *Exp.* 38 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

4850. **Antaplaga dulcita.** (Plate CXLV. fig. 24.)

Grotella dulcita, Schaus, J. N.Y. Ent. Soc. vi. p. 144 (1898).

♀. Head and thorax orange-yellow mixed with whitish; palpi

and frons fuscous; antennæ whitish tinged with fuscous; pectus whitish; legs fuscous; abdomen ochreous white, ventrally white tinged with fuscous. Fore wing whitish suffused with orange-yellow, the costal edge fuscous to middle. Hind wing whitish tinged with fuscous; cilia yellowish white. Underside of fore wing fuscous, the costa ochreous towards apex.

Hab. Mexico, Guadalajara (*Schaus*), 1 ♀. *Exp.* 24 millim. Type † ♀ in U.S. Nat. Mus.

4851. Antaplaga pyronæa.

Grotella pyronæa, Druce, A. M. N. H. (6) xvi. p. 38 (1895); id. Biol. Centr.-Am., Het. ii. p. 489, pl. 94. f. 19.

♀. Head and thorax pure white; palpi, frons, and legs suffused with brown; abdomen ochreous suffused with brown. Fore wing uniform pure white. Hind wing suffused with fuscous brown; the cilia white. Underside of both wings suffused with fuscous brown.

Hab. Mexico, Guerrero (*H. H. Smith*), 2 ♂, 1 ♀ type, Godman-Salvin Coll. *Exp.* 28 millim.

Genus **CYCLOPERA**, nov.

Type, *C. similis*.

Proboscis aborted, small; palpi porrect, very short and not reaching nearly as far as frons, smoothly scaled; frons with large round corneous prominence with raised edges and long bifid corneous spine in centre, a corneous plate below the frons excised in front; eyes large, round; thorax clothed almost entirely with scales and without distinct crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to about one-third.

Sect. I. Antennæ of female serrate.

4852. Cyclopera bucephalidia.

Megalodes bucephalidia, Hmpsn. Ann. S. Afr. Mus. ii. p. 381 (1902).

♀. Head and thorax pale violaceous grey; antennæ rufous; tibiæ and tarsi brown, the latter with slight pale rings; abdomen pale ochreous with a few brown scales. Fore wing pale violaceous grey irrorated with some red-brown especially on costal and inner areas; traces of a waved antemedial line; orbicular represented by a lunule slightly defined by brown, narrow above, expanding below, extending to below cell and tinged with yellow in centre; reniform pale yellow slightly defined by brown, included in a pale yellow patch tinged with rufous on inner side which occupies the terminal area with strongly curved inner edge from apex to inner side of reniform and thence to termen at submedian fold; an oblique

irregularly waved dark brown line from lower angle of cell to inner margin near tornus, with two dark brown streaks from it in submedian interspace, the upper ending at the yellow patch, the lower extending to tornus; postmedial line dark and bent outwards below costa, then obsolescent, slightly angled inwards in discal and submedian folds; traces of a minutely waved subterminal line; a dark

Fig. 181.—*Cyclopera bucephalidia*, ♀. ½.

brown terminal line; cilia chequered dark brown and white. Hind wing whitish thickly irrorated with brown; a terminal series of brown striæ; cilia white; the underside white slightly irrorated with brown.

Hab. Bechuanaland, N'Gami (*Lugard*), 1 ♀ type; Transvaal (*Fead*), 1 ♀; Natal, Coast belt (*Barker*). *Exp.* 16 millim.

Sect. II. Antennæ of male ciliated.

A. Fore wing violaceous grey irrorated with brown ..... *similis.*
B. Fore wing ochreous tinged with rufous..... *galactiplaga.*

4853. Cyclopera similis.

Megalodes similis, Hmpsn. Ann. S. Afr. Mus. ii. p. 382 (1902).

♂. Head and thorax violaceous grey tinged with brown and fuscous; antennæ pale grey; palpi and sides of frons brownish; legs yellowish suffused with dark brown; abdomen pale yellow irrorated with dark brown. Fore wing violaceous grey irrorated with reddish brown especially on basal, costal, and inner

Fig. 182.—*Cyclopera similis*, ♂. ½.

areas; orbicular a whitish lunule incompletely defined by dark scales, narrow and produced above, expanding and with some yellow and brown in it below; reniform yellow with some rufous in centre, narrow and with some white on it above, included in a large rounded yellow patch suffused with rufous on inner side which

occupies nearly the whole terminal area from apex to inner edge of reniform and thence to termen at submedian fold; an oblique double irregular dark line filled in with yellowish from the orbicular to inner margin with two dark streaks from it in submedian interspace, the upper extending to the yellow patch, the lower to termen; two slight dark streaks beyond upper extremity of reniform; postmedial line much interrupted, formed of black-brown scales, bent outwards below costa, slightly incurved at discal fold and oblique below vein 4; subterminal line indistinct, whitish, defined on outer side by a curved red-brown band from costa to discal fold, slightly waved at middle and bent inwards above inner margin; a fine dark brown terminal line; cilia blackish with a fine white line at base. Hind wing whitish irrorated with brown; a brown terminal line.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type. *Exp.* 24 millim.

4854. **Cyclopera galactiplaga.** (Plate CXLV. fig. 25.)

Megalodes galactiplaga, Hmpsn. Ann. S. Afr. Mus. ii. p. 381 (1902).

♀. Head and thorax mixed with some whitish and with a few dark brown scales; pectus and legs browner, the tarsi with slight dark rings; abdomen rufous mixed with some whitish and with dark brown segmental lines. Fore wing ochreous tinged with rufous, suffused in parts with purplish red and irrorated slightly with dark brown; subbasal line indistinct, brown defined by greyish on outer side, from costa to submedian fold; antemedial line brown defined by greyish on inner side, oblique from costa to submedian fold, then acutely angled inwards on vein 1 and outwards above inner margin; claviform very broad, extending to cell, obliquely defined by black at extremity and by a slight brown streak below; orbicular large, elliptical, with brown centre and slight pale annulus defined by black on inner side and on outer side above; reniform rather narrow, yellowish with some rufous in centre and defined by brown and whitish lines on inner side, some dark red-brown suffusion beyond it; postmedial line indistinct, brown, bent outwards below costa, then dentate, incurved below vein 4; a pale elliptical patch on terminal area from apex to below vein 4; subterminal line indistinct, pale defined on inner side by brown and by a black-brown patch at costa, angled inwards below costa, then dentate, crossed by a downcurved dark streak from just beyond postmedial line at vein 3 to termen above vein 4; a terminal series of black-brown striæ. Hind wing reddish brown with terminal series of slight dark lunules; the underside pale irrorated with brown, a brown discoidal lunule, postmedial line excurved to vein 4, then incurved, and traces of subterminal line.

Hab. Natal, Victoria Distr. (*Gooch*), 1 ♀ type. *Exp.* 40 millim.

Genus **SELENISTIS**, nov.

Type, *S. annulella.*

Proboscis aborted, minute; palpi porrect, short, moderately fringed with scales below; frons with large truncate prominence with raised edges, a rounded truncate process in centre and corneous plate below it; eyes large, round; antennæ in both sexes bipectinate with very short branches, the apex serrate; thorax clothed entirely with scales, the prothorax without crest, the metathorax with spreading crest; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of disco-cellulars; 6, 7 shortly stalked; 8 anastomosing with the cell nearly to middle.

4855. Selenistis annulella.

Tarache annulella, Hmpsn. Ann. S. Afr. Mus. ii. p. 383 (1902).

Head and thorax ochreous white, the pro- and metathorax with some black scales; palpi, lower part of frons, and antennæ rufous; pectus tinged with rufous; legs rufous; abdomen ochreous tinged with rufous and with slight dark segmental lines. Fore wing ochreous white suffused in parts with rufous especially on costa, below end of cell, before postmedial line and on termen; antemedial line represented by a diffused rufous mark on inner margin; orbicular only defined by an oblique black striga on its outer edge

Fig. 183.—*Selenistis annulella,* ♂. ½.

with an oblique red-brown mark beyond it angled outwards above before the reniform, which is defined by black, open above and expanding into a rounded patch below; some brown points on post-medial part of costa; postmedial line arising from costa towards apex, excurved below costa, then represented by an oblique series of dark points with traces of a waved line between them angled inwards below vein 2, an oblique rufous patch beyond it from costa, its outer edge slightly angled at vein 6; subterminal line indistinct, whitish, arising from termen at vein 4 and angled inwards on vein 2; cilia dark brown slightly mixed with greyish. Hind wing pale yellow tinged and irrorated with rufous; traces of a brownish discoidal bar and of a diffused postmedial line excurved below costa, then oblique; a brownish terminal line; cilia with slight dark medial line and dark tips; the underside yellow irrorated with dark brown, a brown discoidal bar and curved postmedial line.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂ type; Transvaal, White R. (*Cooke*), 1 ♂, Bultfontein (*Janse*), 1 ♀; Orange R. Colony, Bloemfontein (*Eckersley*), 1 ♂; Zululand, Lr. Tugela (*Reynolds*), 4 ♂, 2 ♀; Natal, Stanger (*Leigh*), 1 ♂; C. Colony, Deelfontein (*Sloggett*), 1 ♂, Heald Town (*Miss F. Barrett*), 1 ♂, 1 ♀. *Exp.* 26–30 millim.

Genus **TRISTYLA**.

	Type.
Tristyla, Smith, Ins. Life, v. p. 332 (1893)	*alboplagiata*.

Proboscis fully developed; palpi porrect, the 2nd joint extending about the length of head and moderately fringed with scales below, the 3rd short; frons with corneous process produced to a long point at middle, to two short points at sides and a short point below, a corneous plate below it; eyes large, round; antennæ of female almost simple; thorax clothed entirely with scales, the prothorax without crest, the metathorax with large spreading crest; tibiæ smoothly scaled; abdomen without crests. Fore wing rather long and narrow, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a short areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell nearly to middle.

4856. **Tristyla alboplagiata.**

Tristyla alboplagiata, Smith, Ins. Life, v. p. 332. fig. 46. 6 (1893); Dyar, Cat. Lep. N. Am. p. 183.

♀. Head white, the palpi above and frons at sides tinged with rufous; thorax white tinged with rufous, the patagia with some black scales near upper edge; the metathoracic crest bright rufous; tibiæ and tarsi banded with fuscous brown; abdomen whitish suffused with ochreous brown. Fore wing white suffused with grey-brown mixed with some rufous except at base and on termen; subbasal line represented by a black striga from costa; antemedial line black slightly defined on outer side by white,

Fig. 184.—*Tristyla alboplagiata*, ♀. ½.

oblique, waved; orbicular represented by a white patch extending to costa and defined on outer side by a black bar in cell; reniform a large white patch extending to costa, its lower half strongly defined by black; a black point on middle of costa; postmedial line closely approximated to reniform, bent outwards below costa, incurved in discal fold, strongly incurved and waved below vein 4; subterminal line represented by the waved edge of brown area and with slight rufous patches beyond it below costa and in discal and

submedian folds; a terminal series of blackish striæ; cilia white, tipped with black at apex, middle, and towards tornus. Hind wing whitish suffused with brown, the cilia white; the underside white irrorated with rufous, a rufous discoidal spot and brown terminal line.

Hab. U.S.A., California, Arizona, Yuma Co., 1 ♀. *Exp.* 24 millim.

Genus **EUTERPIODES**, nov.

Type, *E. pienaari.*

Proboscis aborted, very minute; palpi porrect, very short and not reaching nearly as far as frons, which has a long bifid corneous plate from middle and trilobate corneous plate below it; eyes large, round; antennæ of male bipectinate with short branches to apex; thorax clothed entirely with scales, the prothorax with small spreading crest, the metathorax with large spreading crest of large scales; tibiæ smoothly scaled; abdomen without crests. Fore wing elongate, the costa somewhat concave, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6, 7 from upper angle; 8, 9 stalked; 10, 11 from cell. Hind wing with the cell long; veins 3, 4 from angle; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to about one-third.

4857. Euterpiodes pienaari.

Megalodes pienaari, Dist. A. M. N. H. (7) i. p. 223 (1898).

♂. Head and thorax ochreous mixed with some dark brown especially on palpi, lower part of frons, sides of tegulæ and in metathoracic crest; tegulæ with slight black dorsal mark, the pro- and mesothorax with paired black dorsal bars; pectus and legs white mixed with brown, the tarsi red-brown ringed with white; abdomen ochreous, dorsally suffused with fuscous. Fore wing pure silvery

Fig. 185.—*Euterpiodes pienaari*, ♂. ½.

white; the basal area ochreous with some red-brown before antemedial line, the costal area mostly suffused with leaden-grey to end of cell and the costal edge dark brown; antemedial line black, slightly excurved below costa, then strongly bent inwards and below the cell incurved; orbicular leaden-grey, round, a quadrate leaden-grey patch beyond it defined at sides by black-brown scales; discocellulars defined by two sinuous grey lines; postmedial line black, slightly bent outwards below costa, oblique to vein 6, then formed of lunules to vein 3, then rufous, oblique, sinuous, defined on inner side by black, above vein 2 forming a triangular spot, and on outer side defined by rather diffused black marks; a leaden-grey patch

at apex with oblique black bar across apex; subterminal line white on the grey area with some black before it on costa, then defined by waved grey marks on its inner side, almost obsolete between veins 6 and 4 and with a grey spot beyond it above tornus; a terminal series of black striæ. Hind wing glossy white with slight discoidal spot, curved slightly waved postmedial line, and terminal series of black striæ; the underside with small black-brown discoidal spot, the curved postmedial line represented by some black scales in parts.

♀. Hind wing with the terminal area suffused with fuscous.

Hab. Mashonaland, Salisbury (*Marshall*), 1 ♂; Transvaal, Piet Retief (*Crawshay*), 2 ♂, 3 ♀, White R. (*Cooke*), 1 ♂; Zululand, Lr. Tugela R. (*Reynolds*), 1 ♂; C. Colony, Table Mt., 1 ♂. *Exp.* 30–32 millim.

Genus **TRIOCNEMIS.**

	Type.
Triocnemis, Grote, Papilio, i. p. 77 (1881)	*saporis.*

Proboscis fully developed; palpi upturned, the 2nd joint not reaching to middle of frons and moderately fringed with scales in front, the third short; frons with large rounded prominence with corneous plate below it; eyes large, round; antennæ of male almost simple; thorax clothed with hair and scales mixed, the prothorax without crest, the metathorax with large tufted crest; tibiæ moderately fringed with hair, the fore tibiæ very short, forming a large semilunar plate at extremity with large and small claws on inner side; abdomen without crests. Fore wing with the costa nearly straight, the apex rounded, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

4858. Triocnemis saporis.

Triocnemis saporis, Grote, Papilio, i. p. 77 (1881); Smith, Cat. Noct. N. Am. p. 273.

Head and thorax white; palpi with brown mixed; antennæ tinged with brown; slight brown streaks on upper edge of patagia towards extremity; tibiæ and tarsi banded with brown; abdomen

Fig. 186.—*Triocnemis saporis*, ♂. ½.

white. Fore wing white, the medial area brown tinged with grey and slightly irrorated with white; subbasal line black, from costa to submedian fold; antemedial line black, with some metallic scales on it, oblique from costa to submedian fold where it is angled outwards, then incurved; claviform small, defined by black and

irrorated with black; orbicular with brown centre and white annulus defined by black, round; reniform with white annulus incompletely defined by black, open above, its centre defined by brown and its lower part filled in with brown, constricted at middle, some white suffusion above it on costa; postmedial line blackish towards costa, then only defined by the contrast between the brown and white areas, bent outwards below costa, slightly incurved at discal fold and strongly below vein 4, a wedge-shaped blackish patch beyond it from costa with some white points on costa; a small subterminal blackish lunule below vein 4; a terminal grey-brown band with waved inner edge; a terminal series of blackish striæ defined on inner side by slight white lunules; cilia white, greyish at base and tips. Hind wing white slightly tinged with brown except towards base; a faint curved white postmedial band; a terminal brown line except towards tornus; cilia white faintly tinged with brown at base; the underside white.

Hab. U.S.A., Washington, Colorado, California, Arizona, 1 ♂, 1 ♀, Jerome (*Oslar*), 3 ♂, 1 ♀. *Exp.* 26–32 millim.

Genus **PSEUDINODES**, nov.

Type, *P. producta.*

Proboscis aborted, small; palpi porrect, very short and not reaching nearly to end of frons which has a large rounded prominence with trilobate corneous plate at middle and plate below it; eyes large, round; antennæ of male bipectinate with short branches, the apex serrate; thorax clothed entirely with scales and without crests; mid and hind tibiæ fringed with long hair above; abdomen without crests. Fore wing long and narrow, the costa nearly straight, the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only.

4859. **Pseudinodes producta**, n. sp.

♂. Head white; palpi blackish; antennæ with the branches brown; tegulæ white with olive-green band at middle and some olive-green at tips; thorax olive-green mixed with white and some red-brown; pectus and legs white, the fore tibiæ and the tarsi banded with olive-green; abdomen ochreous white with dark dorsal spot on 2nd segment. Fore wing with the base white with some large rufous raised scales; a subbasal black point below costa; a brown mark above inner margin before the antemedial line which is formed by raised black scales, minutely waved and excurved above inner margin; medial area red-brown with some large raised bluish-white scales and slightly irrorated with black; orbicular and reniform large, slightly defined by black at sides only, the former rounded, the latter with its inner edge concave, its outer expanding into a black spot at middle; the brown area bounded by the postmedial black line except at costa where it

extends to the subterminal line; postmedial line bent outwards below costa, slightly incurved at discal fold, excurved to vein 3, then retracted to lower angle of cell, running along median nervure to origin of vein 2, slightly angled inwards in submedian fold, then slightly excurved, some white points beyond it on costa; postmedial area white; subterminal line white defined on inner side by grey lunules, slightly waved, excurved below vein 7 and at

Fig. 187.—*Pseudinodes producta*, ♂. ½.

middle; the terminal area grey with white patch at apex; a terminal series of brownish lunules defined by a waved white line; cilia red-brown with white lines at base and middle. Hind wing white with terminal series of blackish striæ from apex to submedian fold. Underside of fore wing white with small blackish spot at upper angle of cell, postmedial black bar from costa, and subterminal marks on costa and below vein 7; hind wing with postmedial black point on costa.

Hab. Argentina, Entre Rios (*Berg*), 1 ♂ type. *Exp.* 42 millim.

Genus **PSEUDINA**.

	Type.
Pseudina, Guen. Noct. ii. p. 226 (1852)	*vellerea.*

Proboscis fully developed; palpi upturned, rather slender, the 2nd joint reaching about to middle of frons, the 3rd short; frons smooth; eyes large, round; antennæ simple and somewhat laminate; thorax clothed with scales and hair mixed, the prothorax without crest, the metathorax with large spreading crest; tibiæ fringed with long hair above; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved, crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 almost obsolete from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to near middle.

A. Fore wing with postmedial dark patch on costa connected with the reniform	*fatuella.*
B. Fore wing with medial dark patch on costa connected with the orbicular and reniform.	
a. Fore wing without brown terminal band.	
*a*¹. Fore wing with blue-grey band beyond the postmedial line connected with the dark costal patch	*vellerea.*
*b*¹. Fore wing without blue-grey band beyond the post medial line.....	*cyanostigma.*
b. Fore wing with brown terminal band	*albina.*

*4860. Pseudina fatuella. (Plate CXLV. fig. 26.)

Hecatera fatuella, Dogn. Le Nat. (2) v. p. 211 (1891).

♂. Head and thorax dark olive-brown with a dorsal white stripe coming to a point in front of tegulæ; legs white, the fore legs striped above and the tarsi banded with olive-brown; abdomen white, dorsally suffused with fuscous, leaving white segmental lines. Fore wing silvery white; a black point at base and subbasal points below costa and cell and an oblique striga at inner margin; a small triangular olive-brown antemedial spot on costa; orbicular with olive-brown centre, its annulus very incompletely defined by olive-brown; reniform defined by a fine white line on an olive-brown patch extending to costa towards which it expands, a deep black spot on outer edge of reniform and some white points on costa; the postmedial line bent outwards below costa, with black striæ above and below vein 6, then represented by pale rufous wedge-shaped marks and incurved, below vein 3 becoming an olive-brown band expanding towards inner margin where it extends to the subbasal striga; the subterminal line represented by grey spots between veins 5 and 1, bent inwards below vein 2; a minutely waved grey terminal line between veins 7 and 1; cilia grey with a fine white line through them. Hind wing white with blackish discoidal bar and postmedial points on veins 4 to 1.

Hab. Ecuador, Loja, type † in Coll. Dognin. *Exp.* 36 millim.

4861. Pseudina vellerea.

Pseudina vellerea, Guen. Noct. ii. p. 226, pl. 10. f. 6 (1852).

Head black irrorated with white; thorax white; pectus and legs black mixed with white, the tarsi black ringed with white; abdomen white tinged with brown. Fore wing white; some brown irroration on costa before the waved brown subbasal line

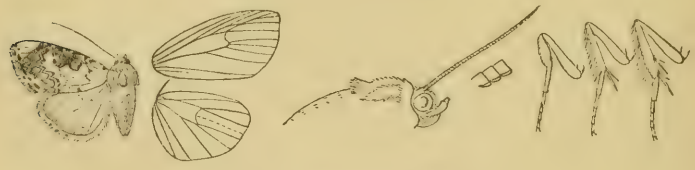


Fig. 188.—*Pseudina vellerea*, ♂. ½.

from costa to submedian fold; an erect waved brown antemedial line with some dark irroration before it on costa; the medial costal area suffused with black irrorated with blue-white; orbicular and reniform with fuscous centres irrorated with blue-white and white annuli defined by black, the former U-shaped, the latter oblique, open above and below, a black patch between them in cell; a faint

oblique waved medial line from cell to inner margin ; postmedial line double filled in with white, strongly bent outwards below costa, oblique to vein 6, then dentate, incurved below vein 4 ; the postmedial area with blue-grey band, oblique towards costa and with black on its outer edge, dentate below vein 5 and incurved below vein 3 ; a series of black striæ just before termen except towards apex, the striæ confluent at middle ; a terminal series of black striæ ; cilia white, mixed with black at tips, the tips wholly black at middle. Hind wing white, the termen suffused with brown, rather broadly in female ; a fine dark terminal line ; cilia with brown medial line towards apex and dark points at middle ; the underside with the costal area tinged with brown, a faint discoidal spot, curved postmedial line from costa to vein 4, and terminal series of small brown lunules.

Hab. Brazil, Petropolis (*J. Grey*), 1 ♂, São Paulo (*D. Jones*), 2 ♂, 3 ♀. *Exp.* 26–36 millim.

*4862. Pseudina cyanostigma. (Plate CXLV. fig. 27.)

Pseudina cyanostigma, Dogn. Ann. Soc. Ent. Belg. li. p. 239 (1907).

♂. Head and base of tegulæ black-brown, the rest of thorax pure white ; fore femora and tibiæ black-brown above, mid tibiæ with some blackish at base, the tarsi black-brown ringed with white ; abdomen white with diffused fuscous dorsal bands. Fore wing pure white ; subbasal line represented by a black striga from costa and grey striga from cell : antemedial line double, grey, oblique, waved, with black spot on its outer side at costa ; claviform defined by black at extremity ; orbicular defined by black at sides only, quadrate ; reniform with grey centre and white annulus defined by black except below, a silvery blue patch in cell between the stigmata and a black-brown patch above it on costa ; a waved grey line from lower angle of cell to inner margin ; postmedial line double, grey, excurved from costa to vein 6, then sinuous and incurved below vein 3, some grey points beyond it on costa ; a grey subterminal line, incurved from costa to vein 6, then approximated to postmedial line and rather diffused ; the terminal area with some cupreous brown at apex, above and below vein 5, and below vein 3, traversed by a series of short black streaks ; a waved grey-black terminal line with series of small cupreous brown lunules before it ; cilia chequered red-brown, fuscous, and white. Hind wing semihyaline white with black terminal line from apex to submedian fold and some brown on termen and cilia at apex ; the underside with the costal area irrorated with a few black scales and with three blackish spots on apical part of termen.

Hab. Argentina, Salta, Metan, type † ♂ in Coll. Dognin. *Exp.* 24 millim.

4863. **Pseudina albina**, n. sp. (Plate CXLV. fig. 28.)

♂. Head black-brown with some blue-grey on vertex; palpi white with black patches at sides of joints; frons white with black centre; thorax white, the base of tegulæ with waved black and brown band; fore tibiæ with brown bands, the tarsi brownish banded with white; abdomen black with some white at base and on anal tuft above, the ventral surface white with black bands. Fore wing silvery white; subbasal line represented by slight black striæ from costa and cell; antemedial line slight, black, interrupted below costa and at submedian fold, oblique, waved; a black patch on middle of costa with some blue-grey suffusion on it, contracting at subcostal nervure and with its lower edge in cell excised; postmedial line represented by a few black scales at costa and inner margin; a broad brown terminal band defined on inner side by an irregularly waved black line except towards costa, incurved from above vein 3 to submedian fold; a pale waved subterminal line defined by fuscous on inner side and with a dentate black mark beyond it below apex, two at middle and two above tornus; a fine waved black terminal line defined on inner side by slight pale lunules; cilia brown with series of greyish fuscous lunules. Hind wing semihyaline white; a narrow brown terminal band from just below apex to below vein 2, the cilia with blackish tips beyond the dark band.

♀. Palpi black, brown at tips; frons black; fore wing with small dark postmedial spots on costa and inner margin; hind wing with the terminal band maculate, the cilia wholly white.

Hab. Brazil, Castro Paraña, ♂ in Coll. D. Jones; Paraguay, Sapucay (*Foster*), 1 ♀ type. *Exp.* 28 millim.

Genus **XEROCIRIS**.

	Type.
Ciris, Grote, Proc. Ent. Soc. Phil. ii. p. 65 (1863), nec Koch, Arachn. 1850	*vilsoni*.
Xerociris, Cockerell, Ent. News Philad. xv. p. 76 (1904)	*vilsoni*.

Proboscis fully developed; palpi obliquely porrect to well beyond frons, the 2nd joint moderately scaled, the 3rd moderate; frons with large pointed conical prominence; eyes large, round; antennæ of male bipectinate with rather long branches to apex; tegulæ and thorax clothed chiefly with scales, the patagia entirely with hair, the prothorax with divided crest, the metathorax with spreading crest; abdomen with large dorsal crest on basal segment. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 9 from 10 anastomosing with 8 to form the areole, 6 from the areole; 11 from cell. Hind wing with vein 3 from near angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or shortly stalked; 8 anastomosing with the cell near base only.

4864. **Xerociris vilsoni.**

Ciris wilsonii, Grote, Proc. Ent. Soc. Phil. ii. p. 65, pl. 3. f. 1 (1863); Kirby, Cat. Lep. Het. p. 40; Dyar, Cat. Lep. N. Am. p. 195.

♂. Head and thorax black-brown mixed with blue-black;

antennæ brown; patagia pure white; legs white, the tarsi with brown marks on the joints; abdomen white with the dorsal crests black-brown. Fore wing silvery white; grey subbasal spots below costa and cell; a blackish fascia mixed with olive-green on costal area from before to beyond middle conjoined to the elliptical orbicular and the rather large reniform stigmata which are olive-green; an olive-green antemedial bar with a silvery purple-grey patch on it from submedian fold to inner margin along which it is

Fig. 189.—*Xerociris vilsoni*, ♂. ½.

continued as a fascia to the terminal band, which has a sinuous olive-green line on its inner edge and is deep purple-grey with some white dentate marks and a fine line on termen; cilia purple-grey with two fine pale lines through them. Hind wing pure white with a chocolate-red patch on termen from tornus to vein 2 and a point above vein 2; cilia purple-grey at the red patch.

Hab. U.S.A., Texas, Shovel Mts., 2 ♂. *Exp.* 40–44 millim.

Larva. Head reddish brown with a black spot on the face of each lobe. Body robust, enlarged at joint 12, purplish black, each segment with a transverse red patch subventrally and a complete band on joint 12; several narrow transverse white lines on each segment; on the thorax and on joint 12 several of the setæ are very long and flattened, spatulate; shields and feet red, tipped with black.—H. G. D.

Genus **EUDRYAS**.

	Type.
Euthisanotia, Hübn. Samml. Exot. Schmett. Zutr. iii. p. 12 (1827), non descr.	*unio.*
Eudryas, Boisd. Spec. gén. Lép. i. p. 4 (1836), non descr.; Wlk. ix. 143 (1856)	*unio.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd short; frons with large rounded prominence with raised edges at extremity and corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed with rough hair and scales mixed, the prothorax without crest, the metathorax with spreading crest; fore tibiæ with very large tufts of hair on outer side, the mid and hind tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent

from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing without terminal band ..... *sancti-johannis.*
B. Hind wing with red terminal band.
  a. Fore wing with the postmedial line not waved and curved inwards to costa ..... *grata.*
  b. Fore wing with the postmedial line waved and not curved inwards to costa.
    a^1. Hind wing with black discoidal lunule ..... *brevipennis.*
    b^1. Hind wing without or with slight discoidal spot ... *unio.*

4865. Eudryas sancti-johannis.

Eudryas sancti-johannis, Steph. Brit. Animals in Coll. Brit. Mus. v. p. 312 (1850), non descr.
Eudryas sanctæ-johannis, Wlk. ix. 144 (1856); Druce, Biol. Centr.-Am., Het. ii. p. 328, pl. 70. f. 8; Kirby, Cat. Lep. Het. p. 39.

Head and thorax red-brown mixed with white; palpi and frons blackish, the former white at base; patagia with white patches; pectus and base of legs orange-yellow, the rest of legs red-brown mixed with some white, the tarsi ringed with white; abdomen orange with dorsal brown spots on basal half, the ventral surface whitish. Fore wing white, the basal half suffused with red-brown leaving a white fascia from base of costa and thence below the cell, some yellow suffusion above vein 1 except at extremity of the dark area; orbicular deep red defined by white, elliptical; reniform olive, angled inwards on median nervure; postmedial line placed towards termen, deep red with an olive band on its inner side with slightly waved inner edge, excurved from costa to vein 2, then incurved, the area beyond it blood-red with traces of a waved whitish subterminal line. Hind wing uniform orange. Underside orange; fore wing with the orbicular and reniform red.

Hab. 1 ♂ type taken at Horsleydown, England; Mexico, Jalapa (*Trujillo*), 1 ♂, Godman-Salvin Coll. *Exp.* 50 millim.

4866. Eudryas grata. (Plate CXLV. fig. 29.)

Bombyx grata, Fabr. Syst. Ent. iii. pt. 1, p. 457 (1793); Stretch, Zyg. & Bomb. N. Am. p. 147, pl. 7. f. 1; Riley, Rep. Ins. Miss. vi. p. 88, fig. 22; Dyar, Cat. Lep. N. Am. p. 195; Kirby, Cat. Lep. Het. p. 39.
Eudryas assimilis, Boisd. Rev. Zool. (3) ii. p. 59 (1874).

Head and a broad dorsal fascia on thorax black-brown with some silvery blue scales; patagia pure white; pectus and base of legs white, the rest of legs black-brown, the fringes on fore tibiæ with some white mixed and tipped with white, the tarsi ringed with white; abdomen orange with dorsal and lateral series of black spots, some white before anal tuft which is black above, the ventral surface white. Fore wing pure white; the costal area crimson-red to end of cell and extending to discal fold, irrorated with white and becoming blackish at costa; orbicular deep crimson, round: reniform crimson and blackish above, its lower part olive and much reduced; an olive patch suffused with fuscous and irrorated with blue-white on middle of inner margin along which it extends to a

point near base; postmedial line placed towards termen, olive with deep olive-brown line on the inner edge, bent outwards to costa, then waved and excurved to submedian fold, then incurved, the area beyond it crimson-red, shading to yellowish at termen; a waved whitish subterminal line with brown mark on it at middle and two blackish lunules beyond it above tornus; a terminal series of crimson lunules defined by yellow. Hind wing golden yellow; a faint dark discoidal spot; a crimson-red terminal band with waved inner edge, with a yellow striga on it towards tornus and a black striga above it on inner area; cilia tipped with white. Underside yellow with pale red terminal band expanding below costa of fore wing which is suffused with fuscous to beyond middle, the orbicular and reniform black; hind wing with black discoidal lunule.

Hab. U.S.A., Atlantic States, New York (*Morrison*), 1 ♂, 1 ♀, Trenton Falls (*Doubleday*), 1 ♂, 2 ♀, Evans Center (*Grote*), 1 ♂, 3 ♀. *Exp.* 30–40 millim.

Larva. Head pale reddish with six small black dots on each lobe. Body enlarged at joint 12, each segment with a median transverse pinkish stripe containing the black dots of the tubercles; the rest with six transverse purplish lines on a whitish ground; shields and feet pinkish with black dots. Food-plant, *Ampelopsis*.—H. G. D.

*4867. Eudryas brevipennis. (Plate CXLV. fig. 30.)

Eudryas brevipennis, Stretch, Zyg. & Bomb. N. Am. p. 151, pl. 7. ff. 3. 4 (1874); Dyar, Cat. Lep. N. Am. p. 195; Kirby, Cat. Lep. Het. p. 39.

♀. Head and thorax very dark chocolate-brown with a few silvery blue scales; antennæ ringed with white; patagia pure white; pectus white; legs dark brown except at base, banded with white, the fore tibiæ fringed with white hair; abdomen orange-yellow, the dorsal crests black, the basal crest with some of the hairs tipped with silvery blue, the ventral surface white with sublateral series of dark brown bars and the extremity and anal tuft dark brown. Fore wing purplish pink, the costal edge fuscous to postmedial band and the costal area irrorated with silvery blue, the inner medial area black-brown with patch of white scales on inner margin; a broad pure white fascia from base where it extends to costa and inner margin, in and below cell to lower angle, then obliquely bent upwards to costa as the postmedial band, a subbasal black point on it below the cell, its upper edge indented by the orbicular and reniform, the former not otherwise defined, the latter olive-brown irrorated with black, the lower edge of band defined by olive-yellow to middle where there is a triangular indentation, its outer edge indented at discal fold, oblique and waved from vein 4 to submedian fold, bounded on outer side by the double waved blackish postmedial line filled in with olive-brown and with slight white bar on it at inner margin; subterminal line curved, waved,

whitish, angled inwards to the postmedial line at discal fold, with slightly darker marks beyond it below costa, at discal fold and below veins 3 and 2; a terminal series of indistinct lunules defined by slight white irroration before them; cilia pale at base, rufous at tips. Hind wing orange-yellow; a black discoidal lunule; the terminal area purplish red with waved inner edge, a black and whitish bar at inner margin and slight whitish bar before termen in submedian fold. Underside of fore wing yellow, the costal area to beyond middle, the orbicular and reniform black-brown, the terminal area red; cilia with series of white points at base.

Hab. U.S.A., California, Los Angeles in U.S. Nat. Mus. *Exp.* 38 millim.

Larva. Head red-brown with six black spots on each lobe. Body slightly enlarged at joint 13, each segment with a median transverse dark orange stripe containing black dots, the rest with fine transverse black lines on a white ground; cervical shield nearly whitish, the others orange with black dots.—H. G. D.

4868. **Eudryas unio.**

Euthisanotia unio, Hübn. Samml. Exot. Schmett. Zutr. iii. p. 12, ff. 431, 432 (1827); Boisd. Spec. gén. Lép. i. pl. 14. f. 9; Stretch, Zyg. & Bomb. N. Am. p. 149, pl. 7. f. 2; Riley, Rep. Ins. Miss. vi. p. 90, fig. 24; Dyar, Cat. Lep. N. Am. p. 194; Kirby, Cat. Lep. Het. p. 39.

Head and a broad dorsal fascia on thorax dark brown, the latter with a few silvery scales mixed; outer part of tegulæ and the patagia pure white, the tegulæ with slight white streaks near dorsal edge; pectus white; legs brown and white, the fore tibiæ black mixed with white and fringed with white, the tarsi with slight white rings; abdomen yellow with dorsal and lateral series of blackish spots except towards extremity, the large basal crest dark brown mixed with silvery scales, the anal tuft and ventral

Fig. 190.—*Eudryas unio,* ♂. ½.

surface white. Fore wing pure white; the costal area deep red to end of cell, extending to discal fold, irrorated with blue-white and with some yellowish on its lower edge; a triangular red patch on inner margin from near base to near postmedial line, irrorated with white and with some diffused olive-yellow on its edges; orbicular only defined on the dark area, semicircular, olive with slight whitish annulus; reniform with its upper part olive with white annulus, its lower part yellowish with slight olive lunule on

its lower edge; postmedial line towards termen, fine, white, defined on each side by olive, somewhat oblique to vein 6, then obliquely excurved to vein 2, then slightly incurved, the area beyond it deep red with indistinct curved waved whitish subterminal line, the terminal area browner irrorated with blue-white. Hind wing pale yellow with deep red terminal band from vein 6 to near tornus with slight line before its inner edge which expands widely in submedian interspace; a bluish white lunule near termen towards tornus; cilia white towards apex, reddish brown tipped with white towards tornus. Underside pale yellow; fore wing with some dark suffusion below basal half of costa, the orbicular and reniform fuscous; hind wing with black discoidal point.

Hab. U.S.A., Atlantic States, Massachusetts, Beverley, 2 ♂, 1 ♀, New York (*Doubleday*, *Burg*, *Grote*, *Packard*), 3 ♂, 4 ♀. *Exp.* 38–50 millim.

Larva. Head red-brown with six black spots on each lobe. Body slightly enlarged at joint 12, each segment with a median transverse orange stripe containing black dots, the rest with fine transverse purplish lines on a pale yellow ground; shields and feet orange, dotted with black. Food-plant, *Epilobium*.—H. G. D.

Genus **CAULARIS**.

	Type.
Caularis, Wlk. xii. 800 (1857)	*undulans*.

Proboscis fully developed; palpi obliquely porrect, reaching to just beyond frons, the 2nd joint fringed with long hair below, the 3rd moderate; frons with large truncate conical prominence with small process at extremity with raised edges; eyes large, round; antennæ of male bipectinate with rather long branches to apex; thorax clothed with long hair only and without crests; tibiæ fringed with long hair; abdomen with large dorsal crest on basal segment. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with cell near base only.

A. Hind wing orange-yellow without discoidal lunule ..... *undulans*.
B. Hind wing yellowish white with dark discoidal lunule ..... *lunata*.

4869. **Caularis undulans**.

Caularis undulans, Wlk. xii. 801 (1857).
Eudryas bartholomæi, Boisd. Rev. Zool. (3) ii. p. 59 (1874); Kirby, Cat. Lep. Het. p. 39.

Head white mixed with fuscous; palpi with the 2nd joint black except in front and at extremity; sides of frons with black marks; antennæ rufous; thorax olive-brown mixed with greyish; pectus and legs yellowish white, the latter irrorated with fuscous, the fore tarsi blackish ringed with white; abdomen pale yellow with the basal crest large, black mixed with metallic blue scales. Fore wing whitish to postmedial line, irrorated with olive-brown

especially on costal and inner areas, the postmedial area olive-brown, the terminal area greyish thickly irrorated with olive-brown; a large antemedial olive-brown patch on inner area; orbicular and reniform small, ill-defined, olive-brown with some silvery blue in centres, the former round; postmedial line dark, arising from costa well beyond middle, strongly incurved below vein 5; a diffused white subterminal line from vein 3 to inner margin; a white

Fig. 191.—*Caularis undulans*, ♂. ½.

terminal line with the cilia beyond it blackish tipped with silvery blue from vein 2 to tornus. Hind wing pale yellow; a pale red terminal band with ill-defined waved inner edge, a black spot on it below vein 3 and streak below vein 2, ending at vein 1; a fine dark terminal line; cilia whitish to vein 3, then black to vein 1. Underside of both wings pale yellow with the costal and apical areas tinged with red.

Hab. Jamaica (*Sturridge, Kaye*), 1 ♂, 1 ♀, Runaway Bay (*Walsingham*), 2 ♂; Haiti, 1 ♂, 1 ♀ type; St. Bartholemew. *Exp.* 32–46 millim.

4870. Caularis lunata. (Plate CXLV. fig. 31.)

Caularis lunata, Hmpsn. A. M. N. H. (7) xiv. p. 169 (1904).

Head and thorax red-brown mixed with white; sides of frons white; pectus white; legs white mixed with brown, the fore tarsi banded with brown; abdomen yellowish white with dorsal series of brown spots, the basal crest small, black, lateral black spots on the three medial segments, the ventral surface suffused with brown. Fore wing white almost wholly suffused and irrorated with olive-brown; a broad white fascia from base of costa and thence in submedian interspace to postmedial line; antemedial line represented by a diffused olive bar from submedian fascia to inner margin; orbicular and reniform represented by obscure olive patches with some silvery scales in centres; the extremity of median nervure and discocellulars with some deep red on them; postmedial line deep red with a white band before it from costa, towards which it is diffused to the submedian fascia, indented beyond lower angle of cell, the line arising from costa towards apex, oblique to discal fold, excurved beyond lower angle of cell, then incurved; postmedial area olive; a white fascia in submedian fold from the postmedial area to termen; a fine dark terminal line

with series of white lunules before it. Hind wing yellowish white; a large fuscous discoidal lunule; a pale red terminal band from apex to vein 1, shading to brown on its inner edge which is irregularly waved, with oblique black spot on it at submedian fold where it is angled outwards to termen and small black spot at vein 1; a fine deep red terminal line; cilia white. Underside pale yellow; fore wing with the orbicular and reniform brown, the apical area suffused with red; hind wing with large dark discoidal lunule and faint reddish terminal band.

Hab. Bahamas, Nassau (*Sir G. Carter*), 2 ♀ type. *Exp.* 36–40 millim.

Genus EROCHA.

	Type.
Erocha, Wlk. ii. 318 (1864)	*mimmia*.
Leiosoma, Feld. Reis. Nov. p. 6 (1875), non descr. nec Steph. Col. 1831	*leucotelus*.
Leonides, Druce, Biol. Centr.-Am., Het. ii. p. 328 (1896)	*leucotelus*.

Proboscis fully developed; palpi porrect to just beyond frons, the 2nd joint moderately fringed with hair, the 3rd short; frons with rounded prominence with truncate conical process at centre with raised edges and corneous plate below it; eyes large, round; antennæ of male typically bipectinate with moderate branches, the apex serrate; thorax clothed with hair and scales mixed and without crests; tibiæ moderately fringed with hair; abdomen with dorsal hairy crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with moderate branches to apex.

4871. Erocha dolens.

Heterocampa dolens, Druce, A. M. N. H. (7) xiii. p. 248 (1904).

♂. Head and thorax clothed with white, black, and chocolate-red hairs and a few scales, the metathorax with band of white hair;

Fig. 192.—*Erocha dolens*, ♂. ½.

the tibiæ fringed with white hair; abdomen black, the extremity yellow, the metathoracic crest blue-black. Fore wing white thickly

irrorated with chocolate-red scales; a white spot at base of costa; antemedial line chocolate-red, interrupted in cell, diffused on outer side and defined on inner side by a white band, inwardly oblique, waved; orbicular and reniform chocolate-red defined by white except above, the former round, the latter lunulate; postmedial line chocolate-red defined on outer side by a white band, oblique from below costa to vein 6, excurved below veins 4 and 3, then retracted to below end of cell and sinuous to inner margin; subterminal line represented by a bar from costa, then a lunulate line; the lunules touching termen; a fine black terminal line; cilia chequered fuscous and white. Hind wing very pale yellow with traces of a blackish postmedial line obliquely excurved from costa to vein 2; cilia white with a few black scales at base; the underside with the costal edge black except at base, the postmedial line more distinct, with a bar from costa and slightly waved between veins 4 and 2.

Hab. S.E. Peru, Agualani (*Ockenden*), 2 ♂. *Exp.* 50 millim.

Sect. II. Antennæ of male bipectinate with moderate branches, the apex serrate, of female serrate.

A. Hind wing with white patch in, below, and beyond cell.
  a. Hind wing with the veins on the white patch not streaked with black ..... *leucodisca*.
  b. Hind wing with the veins on the white patch streaked with black ..... *mummia*.
B. Hind wing without white patch ..... *leucotelus*.

4872. Erocha leucodisca, n. sp. (Plate CXLV. fig. 32.)

♂. Head and thorax chocolate-brown mixed with white hair; pectus mostly white; abdomen brown mixed with some white, the 5th segment with orange band, the ventral surface with the five basal segments yellow, the basal segment with lateral tufts of long brownish ochreous hair. Fore wing chocolate-brown, the area from costa to submedian fold suffused with sap-green to the postmedial line except at base of costal area, the median nervure and veins arising from it streaked with white to the postmedial line, a large diffused white patch beyond the cell from costa to vein 3, with irregular outer edge; subbasal line represented by a slight white striga from below costa, the antemedial line by a slight double excurved line filled in with greenish from above vein 1 to inner margin; the orbicular represented by a slight brown mark with white point below it, the reniform by some greenish points on its outer edge in the interspaces; postmedial line represented by double dark spots on costa and a double sinuous line filled in with greenish from submedian fold to inner margin; a rather diffused chocolate-brown line arising from costa just beyond the postmedial line, excurved from below costa to vein 2, then bent inwards in submedian fold to the antemedial line; a whitish subterminal line bent outwards below costa, then obliquely curved

and minutely sinuous; some white on termen in submedian interspace. Hind wing white, the costal and terminal areas broadly black-brown, the terminal band running inwards to a point on inner margin before middle, the outer edge of white area strongly curved. Underside of fore wing black-brown with large white postmedial patch from below costa to just below vein 2, its outer edge curved.

Hab. Peru, Chanchamayo (*Thamm*), 1 ♂ type. *Exp.* 54 millim.

4873. Erocha mummia.

Bombyx mummia, Cram. Pap. Exot. iii. p. 61, pl. 228. f. C (1779); Kirby, Cat. Lep. Het. p. 186.
Dioptis discreta, Wlk. ii. 319 (1864).

♂. Head and thorax dark reddish brown with some white hairs; basal joint of antennæ white; back of head with white spots above the eyes; coxæ white; abdomen black-brown, some metallic scales in the basal crest, a lateral orange patch on segments 2 to 4. Fore wing dark reddish brown with an olive tinge and some bluish white irroration especially on costal area, the median nervure and bases of veins 7, 6, 4, 3 slightly streaked with white; subbasal line represented by a very indistinct dark striga from costa; antemedial line indistinct, oblique, slightly defined by whitish on outer side; orbicular represented by a very obscure dark mark; reniform a dark lunule defined by white, indistinctly on lower half of inner

Fig. 193.—*Erocha mummia*, ♂. ½.

side; postmedial line represented by a small white spot on costa and indistinct double dark line from submedian fold to inner margin; a rather diffused dark brown line arising from costa beyond the postmedial line, strongly excurved from below costa to vein 3, then bent inwards to the postmedial line; an indistinct whitish subterminal line defined on outer side by slight dark brown marks, bent outwards below costa, then curved and irregularly waved. Hind wing black-brown with semihyaline white patch in, below, and beyond cell, the median nervure and veins 4, 3, 2 on it black; cilia white at tips towards apex and tornus. Underside of fore wing with oblique elliptical postmedial white patch between veins 7 and 2.

Hab. Venezuela, 1 ♂; Fr. Guiana, Cayenne (*Schaus*), 1 ♀; Surinam; Brazil, Amazon, Ega (*Bates*), 1 ♂ type *discreta*. *Exp.* 40–44 millim.

4874. Erocha leucotelus.

Euthisanotia leucotelus, Wlk. xxxii. 635 (1865).
Leiosoma serpentinum, Feld. Reis. Nov. p. 6, pl. 99. f. 23 (1874); Druce, Biol. Centr.-Am., Het. ii. p. 328; Kirby, Cat. Lep. Het. p. 899.
Leisoma juanita, Schaus, Ent. Am. v. p. 87 (1889).

Head and thorax dark reddish brown mixed with some white hair; fore tarsi banded with white; abdomen black-brown mixed with some whitish and with broad orange sublateral fasciæ except at extremity. Fore wing reddish brown with an olive tinge, the costal area more chocolate-brown to postmedial line, the costal, inner, and terminal areas and median nervure irrorated with blue-white, the discocellulars and bases of veins 6, 5, 4, 3 slightly streaked with white; an apical white patch extending to vein 6, with irregular inner edge; subbasal line represented by an obscure dark striga from costa, the antemedial line by indistinct double dark striæ from costa and inner margin, and the postmedial line by a small white spot on costa and double dark line from submedian fold to inner margin; the orbicular represented by a very indistinct dark spot, the reniform defined by a few bluish white scales; a rather diffused dark chocolate-brown line from costa well beyond middle, strongly excurved from below costa to vein 3, then bent inwards in submedian fold to antemedial line; a waved bluish white subterminal line arising from the white apical patch and angled inwards in discal fold and on vein 1; a terminal series of small dark lunules defined by a waved bluish white line except on the white area. Hind wing fuscous brown with a slight reddish tinge; cilia pure white.

Hab. Mexico, Vera Cruz, Paso de San Juan; Colombia, Bogotá, 1 ♂; Peru, Lima, 1 ♀ type. *Exp.* 46 millim.

Sect. III. Antennæ of male ciliated.

4875. Erocha semiviridis.

Euthisanotia semiviridis, Druce, A. M. N. H. (7) xi. p. 200 (1903).

♂. Head and thorax black-brown mixed with some white hairs; tegulæ with white patches; pectus mostly white; fore femora and

Fig. 194.—*Erocha semiviridis*, ♂. ½.

tibiæ fringed with brownish white hair; abdomen black-brown mixed with whitish, the ventral surface with white segmental

lines, lateral tufts of long orange-yellow hair from base. Fore wing dull sap-green, the median nervure except towards base, the discocellulars and bases of veins 7, 4, 3, 2 streaked with white; a small white spot at base; subbasal line represented by a very oblique white striga from costa, the costal area from it to end of cell chocolate-brown irrorated with bluish white; the ante- and postmedial lines represented by indistinct double dark lines from submedian fold to inner margin, the latter oblique; a large white patch from costa just beyond cell to vein 3 with irregularly sinuous rather diffused edges; a diffused dark chocolate-brown line from costa well beyond middle strongly excurved to vein 3, then bent inwards as a broad diffused fascia below submedian fold to base; a fine bluish white subterminal line just beyond the brown line excurved to vein 3, then oblique and with white streaks on the veins from it to termen towards apex; a fine bluish white terminal line from vein 3 to tornus. Hind wing black-brown with large white patch thickly irrorated with black in lower part of cell, below and to well beyond cell, the veins on it streaked with black, its outer edge curved; cilia tipped with white. Underside of fore wing black-brown with white fasciæ in and below cell to middle and large oblique elliptical postmedial white patch between veins 7 and 2.

Hab. Bolivia, Songo (*Garlepp*), 1 ♂; Peru, Cuzco, type † ♂ in Coll. Druce. *Exp.* 50 millim.

Genus **RHOSUS.**

	Type.
Mystrocephala, Herr.-Schäff. Aussereur. Schmett. p. 13 (1850), non descr.	*postica.*
Rhosus, Wlk. ii. 359 (1854)	*postica.*
Pycnodontis, Feld. Reis. Nov. p. 8 (1874), non descr.	*spadicea.*

Proboscis fully developed; palpi porrect, downcurved; frons with long truncate conical prominence with raised ring at extremity; antennæ slightly dilated beyond middle, with short branches, dilated at extremity in male, almost simple in female; head and thorax clothed with rough hair and scales; tibiæ fringed above with rough hair; abdomen smoothly scaled and without crests. Fore wing with veins 3 and 5 from near angle of cell; 6 from below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with vein 2 from well before angle of cell; 3, 4 from angle; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

A. Hind wing yellowish with black terminal band.
  a. Fore wing with the postmedial band intersected by black streaks on the veins ..... *leuconoë.*
  b Fore wing with the postmedial band entire ..... *pulverosa.*
B. Hind wing blackish.
  a. Hind wing with clear yellowish postmedial patch ..... *postica.*
  b. Hind wing with black irrorated yellowish patch on underside in male, on both sides in female ..... *colombiana.*
  c. Hind wing without yellowish postmedial patch.
    a^1. Fore wing with medial spot above vein 1 ..... *aguirreri.*

b^1. Fore wing without medial spot above vein 1.
a^2. Hind wing with three white streaks on underside ... *ovata*.
b^2. Hind wing without white streaks on underside.
a^3. Ground-colour of wings deep red-brown..... *spadicea*.
b^3. Ground-colour of wings brick-red ..... *isabella*.

4876. Rhosus leuconoë.

Pycnodontis leuconoë, Feld. Reis. Nov. pl. 107. f. 13 (1874); Kirby, Cat. Lep. Het. p. 36.

♀. Head, thorax, and abdomen black irrorated with white; proboscis yellow; abdomen with whitish lateral stripes and slight orange streaks towards extremity and whitish ventral suffusion, the extremity orange. Fore wing deep chocolate-brown irrorated with ochreous white; two divergent whitish streaks in cell not reaching extremity; an obliquely curved band beyond the cell between veins 7 and 2 divided into spots by the veins. Hind wing ochreous tinged with orange; the veins black; a terminal black band expanding on apical area.

Hab. Colombia, Bogotá, 1 ♀. *Exp.* 60 millim. Type † in Coll. Rothschild.

4877. Rhosus pulverosa.

Rhosus posticus, Wlk. ii. 360 (1854), part.
Pycnodontis pulverosa, Roths. Nov. Zool. iii. p. 98, pl. xv. f. 34 (1896).

♀. Black; head, thorax, and abdomen irrorated with ochreous white; proboscis yellow; abdomen with the terminal segment and anal tuft orange. Fore wing very strongly irrorated with ochreous; an oblique elliptical ochreous white spot beyond the cell between veins 7 and 2, with traces of a line beyond it angled at vein 4 and oblique towards costa and inner margin. Hind wing with large ochreous white patch extending from near base to beyond middle of vein 3 and from subcostal nervure to inner margin, intersected by the dark veins. Underside of fore wing with wedge-shaped whitish mark in cell.

Hab. Panama, 1 ♀; Venezuela, 1 ♀. *Exp.* 48 millim.

4878. Rhosus postica.

Rhosus posticus, Wlk. ii. 360 (1854).
Melanchroia clavigera, Wlk. ii. 390 (1854).
Melanchroia æruginosa, Wlk. ii. 391 (1854).
Mystrocephala quadrimacula, Herr.-Schäff. Aussereur. Schmett. f. 435 (1855).

♂. Deep red-brown irrorated with ochreous white scales; proboscis yellow; coxæ ochreous white; abdomen with lateral line and ventral bands ochreous white, the anal tuft orange. Fore wing with oblique elliptical ochreous white spot beyond the cell between veins 7 and 3; cilia tipped with white at apex. Hind wing with

wedge-shaped ochreous white patch from middle of cell to beyond its extremity and more or less developed streaks in submedian fold

Fig. 195.—*Rhosus postica*, ♂. ½.

and on inner area from near base to beyond middle; the underside with white streak on basal half of costa.

♀. Hind wing without the whitish streaks in submedian fold and on inner area on upperside; the cilia white tipped at apex and towards tornus; coxæ and ventral surface of abdomen with hardly a trace of yellow.

Hab. Brazil, Rio Janeiro, 2 ♂, 2 ♀, type and types *clavigera* and *æruginosa*. *Exp.* 42 millim.

4879. **Rhosus colombiana**, n. sp. (Plate CXLVI. fig. 1.)

Head and thorax deep chocolate-red irrorated with yellowish white; proboscis yellow; abdomen black with slight dorsal yellowish irroration, the extremity orange, the ventral surface with pale yellow bands in male. Fore wing chocolate-red sparsely irrorated with pale yellow; an oblique yellowish white band beyond the cell between veins 7 and 2. Hind wing black-brown, the female with black-irrorated yellowish patch just beyond the cell running obliquely from vein 6 to 3; cilia yellowish at tips; the underside with slight streak in end of cell, and the patch below the cell present in both sexes.

Hab. Colombia, 1 ♀ type, ♂ in Mus. Berlin. *Exp.* ♂ 40, ♀ 44 millim.

*4880. **Rhosus aguirreri**. (Plate CXLVI. fig. 2.)

Alypia aguirreri, Berg. An. Soc. Arg. xiii. p. 174 (1882); Kirby, Cat. Lep. Het. p. 36.

♀. Black-brown irrorated with grey-white; anal tuft orange. Fore wing with red streaks on base of costa, in cell, and above submedian fold, the last extending from base to the terminal band, which is somewhat maculate, expands slightly at apex, is angled inwards at vein 5, and ends at submedian fold; a yellowish medial spot above vein 1 and a large spot beyond the cell from vein 8 to below 3, somewhat oblique and constricted at middle. Hind wing dark chocolate-brown.

Hab. Argentina, Buenos Ayres, type † in Mus. Buenos Ayres. *Exp.* 38 millim.

4881. Rhosus ovata.

Pycnodontis ovata, Roths. Nov. Zool. iii. p. 98, pl. 15. f. 33 (1896).
Rhosus unipuncta, Schaus, J. N.Y. Ent. Soc. iv. p. 153 (1896).

Head, thorax, and abdomen black irrorated with yellowish white; proboscis orange; coxæ and hind tibiæ with yellowish hair; tarsi ringed with white; abdomen with the extremity orange and with pale yellow ventral bands. Fore wing deep chocolate-brown irrorated with yellowish white; an oblique elliptical yellowish white spot beyond the cell between veins 8 and 3; cilia slightly white at apex. Hind wing black-brown, the cilia white at tips: the underside with more or less developed white streaks on costa, median nervure, and vein 1.

Hab. Brazil, Leopoldina, 1 ♂, 1 ♀, Bahia, São Paulo; Argentina (*Wilkinson*), 1 ♂, 1 ♀. *Exp.* 32–42 millim.

4882. Rhosus spadicea.

Pycnodontis spadicea, Feld. Reis. Nov. pl. 107. f. 12 (1874); Kirby, Cat. Lep. Het. p. 36.

♂. Deep red-brown, slightly irrorated with ochreous white; proboscis yellow; gulæ, coxæ, and ventral bands on abdomen ochreous white; anal tuft orange. Fore wing with oblique ochreous yellow band beyond the cell from below costa to vein 2 near termen. Hind wing with the cilia yellow at apex and on underside.

♀. Without ochreous white on coxæ and ventral surface of abdomen.

Hab. Colombia, Bogotá; Ecuador, Chiguinda, 2 ♂, 1 ♀; Peru. *Exp.* ♂ 40, ♀ 44 millim.

*4883. Rhosus isabella. (Plate CXLVI. fig. 3.)

Rhosus isabella, Dognin, Ann. Soc. Ent. Belg. xlii. p. 345 (1898).

♀. Head black irrorated with white; thorax deep red-brown irrorated with ochreous; abdomen black irrorated with ochreous, the extremity orange; a lateral series of white points; wings brick-red. Fore wing thickly irrorated with ochreous; a very oblique ochreous band beyond the cell from vein 7 to below 3; cilia black. Hind wing slightly irrorated with ochreous, the cilia ochreous.

Hab. Ecuador, type † ♀ in Coll. Dognin. *Exp.* 54 millim.

Genus PARATUERTA.

Type.
Paratuerta, Hmpsn. Ann. S. Afr. Mus. ii. p. 282 (1902) ..... *marshalli.*

Proboscis fully developed; palpi porrect, the 2nd joint fringed with long scales below, the 3rd moderate in male, long in female; frons with large truncate conical prominence with raised edges and corneous plate below it; eyes large,

round; antennæ of male strongly serrate, of female minutely serrate; thorax clothed with rough hair and scales mixed and without crests; tibiæ fringed with long hair, the fore tarsi clothed with rough hair above; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the white fascia in submedian interspace broad, its lower edge indented at middle and with two spots above its extremity ..... *marshalli.*
B. Fore wing with the white fascia in submedian interspace narrow, interrupted before middle, its terminal part a narrow streak ..... *laminifera.*

4884. Paratuerta marshalli.

Paratuerta marshalli, Hmpsn. Ann. S. Afr. Mus. ii. p. 282 (1902).

Head black mixed with white; antennæ black; thorax dark brown mixed with ochreous white; pectus and legs orange, the fore femora fringed with purple-brown, the fore tibiæ and the tarsi black irrorated with white; abdomen orange with dorsal and ventral series of black spots. Fore wing purplish grey irrorated with white, the cell and area just below it and beyond it to postmedial line

Fig. 196.—*Paratuerta marshalli*, ♂. ½.

suffused with olive-brown, with slight dark streaks on the veins and in submedian fold; an irregular white fascia in submedian interspace from base to postmedial line, its lower edge produced to an oblique tooth at middle, then excised, the extremity of the fascia acute with two small white spots above it on the postmedial line, which is indistinctly double, obliquely curved, its inner edge slightly waved at the white spots, not extending below the white fascia; an indistinct minutely waved subterminal blackish line angled inwards in submedian fold; a blackish terminal line towards tornus; cilia dark brown mixed with grey. Hind wing orange-yellow with narrow black terminal band from apex to vein 1, the terminal part of which is irrorated with black scales. Underside of fore wing orange with black discoidal lunule, the costa and a terminal band dark brown irrorated with grey, the latter broad at

apex, narrowing to tornus, its inner edge curved, some whitish marks on termen from vein 7 to tornus; hind wing with the termen narrowly dark to before middle.

Hab. Mashonaland (*Dobbie*), 1 ♂, 1 ♀, Salisbury (*Marshall*), 1 ♀ type. *Exp.* 44–52 millim.

*4885. Paratuerta laminifera.

Euscirrhopterus laminifer, Saalm. Lep. Madag. p. 140, f. 133 (1884); Kirby, Cat. Lep. Het. p. 40.

Head and thorax red-brown mixed with grey; abdomen orange. Fore wing red-brown, the inner area and streaks on the veins darker, the terminal area grey; a black discoidal point; a white fascia in submedian interspace from near base to postmedial line, very narrow to before middle, where it is interrupted, then broader, its lower edge produced to a point beyond middle, ending as a narrow streak from upper edge; postmedial line obliquely curved from costa towards apex to extremity of the white fascia; a slight pale subterminal line, acutely angled inwards in submedian fold; a fine dark terminal line. Hind wing orange-yellow with rather diffused brown terminal band from apex to just above tornus, its inner edge angled inwards in submedian fold.

Hab. Madagascar, Nossi-bé. *Exp.* 50 millim. This species is unknown to me.

Genus GERRA.

	Type.
Gerra, Wlk. xxxi. 141 (1854)	*radicalis.*
Fenaria, Grote, Papilio, ii. p. 132 (1882)	*sevorsa.*

Proboscis fully developed; palpi obliquely porrect to just beyond frons, the 2nd joint fringed with long hair below, the 3rd short; frons with large rounded prominence with truncate conical process at centre, with raised edges and corneous plate below it; eyes large, round; antennæ of male bipectinate with moderate branches to apex, of female serrate; thorax clothed with hair and hair-like scales and without crests; tibiæ fringed with long hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with yellow band beyond the cell on underside.
  a. Shoulders with orange patches ..... *radicalis.*
  b. Shoulders without orange patches ..... *sevorsa.*
B. Fore wing with white band beyond the cell on underside ..... *ælia.*

4886. Gerra radicalis.

Gerra radicalis, Wlk. xxxi. 141 (1854); Kirby, Cat. Lep. Het. p. 406.
Diamuna adrasta, Druce, Biol. Centr.-Am., Het. i. p. 334, pl. 30. f. 20 (1889).

Head and thorax chocolate-brown with a few metallic blue scales;

shoulders with orange patches; abdomen black-brown with some metallic blue scales in the dorsal crests. Fore wing chocolate-brown irrorated with blue-white and metallic silvery blue scales; a very indistinct rufous antemedial line, oblique to submedian fold, then angled inwards on vein 1 and outwards above inner margin; orbicular and reniform defined by rufous and with some metallic blue scales in centres, the former round, the latter rather irregular,

Fig. 197.—*Gerra radicalis*, ♂. ½.

and with a faint yellowish patch beyond it; postmedial line indistinct, minutely waved, excurved from costa to vein 4, then oblique, closely approximated to the subterminal line, which is irregularly sinuous, dark, defined on outer side by bright rufous suffusion, then by a slight pale band; a faint pale line at base of cilia. Hind wing orange-yellow with broad dark brown terminal band with minutely waved inner edge; cilia greyish at tips. Underside of fore wing with some orange at base and a wedge-shaped postmedial patch from below costa to just below vein 2.

Hab. Mexico, Jalapa (*Trujillo*, *Hoeye*), 2 ♂, 2 ♀, Guerrero (*H. H. Smith*), 1 ♂, 1 ♀, Patycuaro (*Godman*), 1 ♀ type *adrasta*, Orizaba (*Flohr*), 1 ♀ Godman-Salvin Coll., hab. ign., 1 ♂ type. *Exp.* 42–48 millim.

4887. Gerra sevorsa.

Fenaria sevorsa, Grote, Papilio, ii. p. 132 (1882); Dyar, Cat. Lep. N. Am. p. 195; Kirby, Cat. Lep. Het. p. 39.
Diamuna ædessa, Druce, Biol. Centr.-Am., Het. i. p. 334, pl. 30. ff. 21, 22 (1889).

Head and thorax chocolate-brown mixed with whitish scales; tarsi blackish ringed with white; abdomen black-brown, the dorsal crests with some metallic scales, the anal tuft with some grey. Fore wing chocolate-brown irrorated with bluish white and some metallic silvery scales, a diffused whitish patch beyond the cell from costa to vein 3; antemedial line indistinct, oblique, waved; orbicular and reniform olive-brown with some metallic scales in centres, the former defined by chocolate-red, round, the latter defined by red on inner side only; postmedial line very indistinct, diffused, excurved from below costa to vein 4, then incurved; traces of a pale waved subterminal line with rufous marks before and beyond it in the interspaces, somewhat incurved at discal fold and below vein 3; cilia with a slight pale line at base. Hind

wing orange with rather broad black terminal band expanding somewhat at apex and tornus. Underside of fore wing with the basal costal area orange, a broad oblique postmedial orange band from below costa to below vein 2, rounded below.

Ab. 1. Underside of fore wing with yellow spot in end of cell. —Mexico.

Hab. U.S.A., Arizona, Huachuca Mts. (*Oslar*), 1 ♂, 3 ♀; Mexico, Jalapa (*Trujillo*), 1 ♂; Guatemala, Volcan de Atitlan (*Champion*), 1 ♂, type *ædessa*, Godman-Salvin Coll. *Exp.* 36–50 millim.

4888. Gerra ælia.

Diamuna ælia, Druce, Biol. Centr.-Am., Het. i. p. 334, pl. 30. ff. 23, 24 (1889).

♂. Head, tegulæ, pectus, and legs chocolate-brown mixed with some white hairs; thorax rufous; abdomen dark brown, the crests with purplish scales mixed, the ventral surface with some grey hairs. Fore wing chocolate-brown irrorated with blue-white especially on the costal area, veins, and beyond the cell; antemedial line indistinct, double filled in with olive-brown, oblique, waved; orbicular and reniform olive-brown defined by chocolate-red, the former rounded, the latter with chocolate lunule on discocellulars; postmedial line chocolate defined by olive-brown outer side, oblique from costa to vein 4, then inwardly oblique and sinuous; an indistinct diffused curved subterminal chocolate line and a somewhat lunulate terminal line; cilia olive-brown intersected with whitish. Hind wing orange, with broad black-brown terminal band expanding somewhat at costa and inner margin and with slightly waved inner edge; cilia olive-brown with a slight pale line at base. Underside of fore wing with some orange on base of costa, a white spot in end of cell, and oblique white postmedial band from below costa to vein 2.

Hab. Panama, Chiriqui (*Champion*), 1 ♂ type, Godman-Salvin Coll. *Exp.* 38 millim.

Genus **GERRODES**, nov.

Type, *G. longipes*.

Proboscis fully developed; palpi obliquely porrect to just beyond frons, the 2nd joint fringed with long hair in front, the 3rd short; frons with long truncate conical process with raised edges and corneous plate below it; eyes large, round; antennæ of male somewhat laminate and ciliated; thorax clothed with hair only, the extremities of patagia with thick tufts of upturned hair, the prothorax without crest, the metathorax with spreading crest; tibiæ fringed with long hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; vein 3 from near angle of cell; 5 from well above angle; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4889. Gerrodes longipes.

Diamuna longipes. Druce, Biol. Centr.-Am., Het. i. p. 334, pl. 30. f. 18 (1889).

Head and thorax red-brown mixed with some grey, the tuft of scales at extremity of patagia and the metathoracic crests brighter rufous; abdomen red-brown dorsally suffused with blackish, the basal crest rufous. Fore wing bright red-brown, the inner and terminal areas tinged with grey, a slight pale streak in end of cell

Fig. 198.—*Gerrodes longipes*, ♂. ¾.

and pale streaks in the interspaces beyond upper angle; a slight dark streak below basal half of median nervure and a minute subbasal streak above inner margin; subbasal and antemedial lines, orbicular, and reniform absent; postmedial line dark brown, slightly defined by greyish on outer side, arising from costa towards apex, excurved to vein 3, then double, bent inwards and running very obliquely to submedian fold beyond middle, a short white streak below it towards vein 2; subterminal line dark brown defined by whitish on inner side, excurved to vein 3, then bent inwards to vein 1 beyond middle; a minutely waved dark terminal line; cilia pale rufous with a slight dark line through them. Hind wing orange with a broad black-brown terminal band expanding on inner area; cilia greyish with a fine dark line through them. Underside of fore wing yellow, the costal area rufous, the terminal area greyish brown with slight pale streaks on the veins, some rufous suffusion in middle of cell, a large blackish discoidal spot with some rufous suffusion below it; hind wing with blackish discoidal spot, the terminal band extending on costa to before middle where it shades to rufous and not expanding at tornus.

Hab. Mexico, Jalapa (*Trujillo*), 5 ♂, 1 ♀ type, Godman-Salvin Coll. *Exp.* 54–60 millim.

Genus **AUCULA.**

	Type.
Aucula, Wlk. Trans. Ent. Soc. (3) i. p. 253 (1862)	*josioides.*
Arpia, Schaus, J. N.Y. Ent. Soc. iv. p. 148 (1896)	*janeira.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching to about middle of frons and fringed with long hair in front, the 3rd moderate, porrect; frons with rounded prominence with truncate conical process at centre with raised edges and corneous plate below it; eyes large, round; antennæ of both sexes typically bipectinate with rather short branches

to apex; thorax clothed with hair only and without crests; tibiæ fringed with long hair; abdomen clothed with rough hair and without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from just below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. (*Aucula.*) Antennæ in both sexes bipectinate, with rather short branches to apex.

A. Hind wing with the orange patch broad and extending to well below submedian fold ..... *josioides.*
B. Hind wing with the orange patch narrow and not extending to below submedian fold ..... *buprasia.*

4890. Aucula josioides. (Plate CXLVI. fig. 4.)

Aucula josioides, Wlk. Trans. Ent. Soc. (3) i. p. 253 (1862); Kirby, Cat. Lep. Het. p. 381.

♀. Head and thorax chocolate-red mixed with white hairs; palpi and legs black mixed with white, the fore coxæ ochreous white; pectus in front orange; abdomen black. Fore wing chocolate-red irrorated with bluish-white scales; a diffused yellowish patch beyond the cell extending to vein 2 and to the postmedial line, which is indistinct, oblique from costa to vein 6, excurved to vein 4, then incurved. Hind wing orange with broad black terminal band with sinuous inner edge, expanding at costa to before middle and on inner margin to near base. Underside of fore wing with orange fascia on inner margin and curved band from costa beyond middle to tornus, expanding from below costa to vein 3.

Hab. Brazil, Petropolis (*Rev. H. Clark*), 1 ♀, Rio Janeiro. *Exp.* 56 millim.

4891. Aucula buprasia.

Leiosoma buprasium, Druce, A. M. N. H. (6) xx. p. 300 (1897).

♂. Head and thorax deep chocolate-red: antennæ black-brown; palpi and legs black irrorated with white scales, the coxæ, femora,

Fig. 199.—*Aucula buprasia*, ♂. ½.

and tibiæ fringed with ochreous-white hair; abdomen black, the anal tuft orange. Fore wing deep chocolate-red irrorated with blue-white scales on terminal half; a diffused yellowish patch

beyond the cell extending to vein 2 and to the postmedial line, which is indistinct, oblique from costa to vein 6, excurved to vein 3, then incurved. Hind wing orange, the costal area to near base, the inner area to submedian fold, and a terminal band black, leaving the orange area rather narrow and arched above. Underside of fore wing with oblique orange postmedial patch from below costa to below vein 2.

Hab. Fr. Guiana, St. Jean Maroni (*Schaus*), 1 ♂; Ecuador, type † in Coll. Druce. *Exp.* 42 millim.

Sect. II. Antennæ of male bipectinate with moderate branches to apex, of female serrate.

A. Abdomen with orange lateral patches at base ..... *hilzingeri.*
B. Abdomen without orange lateral patches at base ..... *magnifica.*

4892. Aucula hilzingeri.

Metagarista hilzingeri, Berg, An. Soc. Argent. xiii. p. 176 (1882); Kirby, Cat. Lep. Het. p. 41.

Head and thorax deep red mixed with white hair; pectus with some ochreous hair; abdomen black-brown with some orange at base of sides and in anal tuft. Fore wing deep red thickly irrorated with white; a short curved white subbasal line; a red antemedial line angled outwards in submedian fold where there is

Fig. 200.—*Aucula hilzingeri*, ♀. ½.

a white patch before it and a white streak from it to postmedial line; reniform rather small, defined by red; postmedial line red, strongly bent outwards below costa and angled outwards below vein 4, then retracted to below end of cell and excurved at vein 1, with a white patch before and just beyond it from costa to vein 3, and a lunule beyond it in submedian interspace; an irregularly crenulate red line just before termen with white beyond it; a fine black terminal line; cilia chequered fuscous and white. Hind wing orange-yellow with black terminal band oblique from costa beyond middle to vein 4, then narrow and with irregular inner edge; cilia chequered white and black. Underside of fore wing fuscous with the basal area and postmedial patch orange; hind wing with the costa narrowly fuscous, a black discoidal spot.

Hab. Argentina, Buenos Ayres (*O. W. Thomas*), 1 ♀, ♂ in Coll. Grote. *Exp.* ♂ 46, ♀ 56 millim.

*4893. Aucula magnifica. (Plate CXLVI. fig. 5.)

Euthisanotia magnifica, Schaus, Trans. Am. Ent. Soc. xxx. p. 150 (1904).

♀. Head and thorax black-brown with some white hairs, especially on head; tegulæ with some deep red; fore tibiæ with white streaks above; abdomen black-brown with some white hairs on ventral surface. Fore wing deep chocolate-red thickly irrorated with bluish white; subbasal line white, curved, from costa to vein 1; antemedial line red defined on inner side by white except in cell, waved from cell to inner margin; claviform represented by a short white streak; orbicular and reniform black with a few white scales on them, the former round, a small V-shaped white mark between them, the latter defined by white on outer side and followed by a whitish patch; postmedial line red defined on outer side by a white band except just below vein 2, angled outwards at vein 7, excurved at middle, bent inwards below vein 2 and slightly angled outwards at vein 1; a waved red subterminal line defined by white on inner and outer sides, touching termen in the interspaces between veins 7 and 2; a fine black terminal line; cilia chequered black and white. Hind wing pale yellow, the costal and terminal areas broadly and the inner margin black-brown with a reddish tinge; a slight brown discoidal bar; the inner edge of terminal band incurved at submedian fold; slight terminal white striæ at the veins; cilia chequered black-brown and white. Underside of fore wing dark reddish brown; the basal area yellowish; an oblique yellowish white postmedial band incurved at discal fold and ending at vein 2, some white on costa towards apex; hind wing with irregular diffused triangular brown patch from costa to lower angle of cell, the inner edge of terminal band irregular.

Hab. Brazil, Petropolis, type† ♀ in U.S. Nat. Mus. *Exp.* 54 millim.

Sect. III. (*Arpia.*) Antennæ of male ciliated.

A. Fore wing with whitish costal fascia expanding triangularly before middle and into a hook beyond middle ..... *janeira.*
B. Fore wing without whitish costal fascia ..... *sublata.*

4894. Aucula janeira.

Arpia janeira, Schaus, J. N.Y. Ent. Soc. iv. p. 148 (1896).
Copydryas marginalis, Roths. Nov. Zool. iv. p. 312, pl. 7. f. 10 (1897).

♂. Head grey; palpi with chocolate band on 2nd joint; sides of frons chocolate; antennæ black; thorax chocolate-red with broad dorsal grey stripe and grey stripes on tegulæ; pectus grey; the legs blackish mixed with grey; abdomen black-brown, the ventral surface greyish towards base. Fore wing chocolate-red; the costal area white irrorated with brown and red, ending in a point before apex, triangularly produced at middle to below cell and connected with inner margin near tornus by a fine very oblique

line forming a slight fork above vein 1, and with another triangular projection beyond the cell extending to below vein 4 and with its extremity strongly recurved. Hind wing orange, the costal and terminal areas broadly black, the inner area black narrowing to a

Fig. 201.—*Aucula janeira*, ♂. ½.

point near base, the upper extremity of the orange area arched. Underside of fore wing black-brown with large yellow patch on basal half in and below cell, and broad oblique postmedial band from below costa to termen between veins 4 and 2.

Hab. Brazil, Rio Janeiro, 1 ♂. *Exp.* 52 millim.

4895. **Aucula sublata.** (Plate CXLVI. fig. 6.)

Bepara sublata, Wlk. xxxi. p. 143 (1864); Kirby, Cat. Lep. Het. p. 400.

♂. Head and thorax deep chocolate-red mixed with whitish; abdomen blackish. Fore wing deep chocolate-red irrorated with blue-white; two indistinct antemedial lines, widely separated and oblique from costa to submedian fold, then incurved and approximate; an indistinct double waved postmedial line, excurved from costa to vein 4, then incurved; a dentate blue subterminal line from costa to vein 6 and a similar terminal line to vein 3, Hind wing orange-yellow, the costal and inner areas to near base and a terminal band black, the orange area arched above. Underside of fore wing with oblique orange postmedial patch from below costa to below vein 2.

Hab. Brazil, Amazons, Ega (*Bates*), 1 ♂ type. *Exp.* 32 millim.

Genus **VESPOLA.**

Type.

Vespola, Wlk. Journ. Linn. Soc., Zool. ix. p. 185 (1868) ..... *cæruleifera.*

Proboscis fully developed; palpi upturned, slender, the 2nd joint reaching to vertex of head, the 3rd long and dilated at extremity; frons smooth; eyes large, round; antennæ of male minutely ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with

the apex quadrate, the termen excurved at middle, then excised to tornus, not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4896. Vespola cæruleifera.

Vespola cæruleifera, Wlk. Journ. Linn. Soc., Zool. ix. p. 186 (1868); Druce, Biol. Centr.-Am., Het. i. p. 352, pl. 31. f. 12.

♂. Head and thorax black-brown sparsely irrorated with silvery blue scales, the pro- and metathoracic crests with some rufous; tarsi slightly ringed with white; abdomen very dark red-brown irrorated with a few silvery blue scales, pale silvery blue lateral fasciæ from 2nd to 5th segments, the ventral surface to 5th segment white tinged with silvery blue towards extremity. Fore wing black-brown irrorated with silvery blue, the terminal area with a leaden grey gloss; a waved silvery blue antemedial line excurved at median nervure; orbicular an indistinct dark brown spot;

Fig. 202.—*Vespola cæruleifera*, ♂. ½.

reniform indistinct, dark brown with slight rufous centre; postmedial line silvery blue, oblique from costa to vein 6, then inwardly oblique and sinuous; subterminal line represented by a chocolate-red patch below costa with oblique line from it to termen below vein 4 and an oblique line from vein 3 to termen above tornus; a rather maculate black terminal line. Hind wing black-brown with a brilliant metallic blue fascia along median nervure from near base expanding into a large patch beyond the cell. Underside of fore wing with some brilliant metallic blue suffusion below basal half of costa and in and just below cell; hind wing suffused and irrorated with brilliant metallic blue except at apex.

Hab. Panama, Bugaba (*Champion*), 1 ♂, Godman-Salvin Coll., Chiriqui; Colombia, Bogotá; Peru (*Simons*), 1 ♂. *Exp.* 36 millim.

Genus PSYCHOMORPHA.

Type.

Psychomorpha, Harr. Amer. Journ. Sci. xxxvi. p. 319 (1839)..... *epimenis.*

Proboscis fully developed; palpi porrect, short, clothed with long hair; frons with rather large pointed conical prominence; eyes small, elliptical;

antennæ of male bipectinate with moderate branches to apex; thorax clothed with rough hair only and without crests; tibiæ fringed with long hair; abdomen clothed with rough hair and without crests. Fore wing with the apex rectangular, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing with the red area brilliant cupreous red and extending to termen ..... *euryrhoda*.
B. Hind wing with the red area orange-red, leaving a black terminal band ..... *epimenis*.

4897. **Psychomorpha euryrhoda**, n. sp. (Plate CXLVI. fig. 7.)

♂. Head, thorax, and abdomen black-brown with some metallic blue scales. Fore wing brown suffused with cupreous red and irrorated with some silvery blue scales; antemedial line indistinct, formed by diffused silvery blue scales, oblique from costa to vein 1; a patch of silvery blue scales above middle of vein 1; orbicular indistinctly defined by diffused silvery blue scales, round; a broad somewhat oblique postmedial white band narrowing to costa and vein 1 where it terminates, its inner edge hooked at lower angle of cell, its outer edge excurved; a diffused curved slightly waved subterminal silvery blue line; a terminal series of slight patches of blue-white scales. Hind wing fiery crimson-red; the basal area dark brown with very irregular outer edge, on inner margin extending to near tornus; cilia dark brown. Underside of fore wing with the basal half of costal area suffused with silvery blue; a wedge-shaped bluish white patch in middle of cell and curved bar near its extremity, the postmedial band as above; hind wing with the costa narrowly brown suffused with silvery blue, a slight dark discoidal bar.

Hab. U.S.A., Florida (*Doubleday*), 2 ♂ type. *Exp.* 28 millim.

4898. **Psychomorpha epimenis.**

Callimorpha epimenis, Drury, Ill. Exot. Ent. iii. p. 40, pl. 29. f. 2 (1780); Kirby, Cat. Lep. Het. p. 36; Dyar, Cat. Lep. N. Am. p. 194.

Head, thorax, and abdomen black-brown with a few greyish hairs. Fore wing black-brown slightly suffused with coppery red

Fig. 203.—*Psychomorpha epimenis*, ♂. ½.

and irrorated with a few white and metallic bluish scales on basal half and on termen; a large white postmedial patch from costa to

submedian fold, narrowing at costa and lower extremity, its inner edge angled inwards at lower angle of cell and its outer edge excurved from below costa; a diffused curved silvery blue subterminal line, slightly incurved at discal fold. Hind wing black-brown with broad orange-red postmedial band from below costa to above tornus, narrowing towards costa and tornus; cilia with a silvery blue gloss. Underside of fore wing black-brown with a cupreous gloss, the basal half of costal area suffused with silvery blue scales, a triangular white patch in middle of cell and bar across end of cell, the postmedial patch as on upperside; hind wing with the costal and terminal areas suffused with silvery blue scales.

Hab. U.S.A., Atlantic States, Kansas (*Snow*), 1 ♀, Texas, Dallas (*Boll*), 3 ♂, 1 ♀. *Exp.* 26–30 millim.

Larva. Head red-brown with four black spots on each lobe. Body slightly enlarged at joint 12, each segment with four purple-brown transverse lines alternating with four pale yellow ones; a pale red dorsal patch on joint 12, containing four tubercles in a square; cervical shield and anal plate red, spotted with black. Food-plant, Grape (*Vitis*).—H. G. D.

Genus **OVIOS.**

	Type.
Ovios, Wlk. iii. p. 753 (1855).....	*capensis.*

Proboscis fully developed; palpi obliquely porrect, extending to well beyond frons, the 2nd joint fringed with long hair in front, the 3rd moderate; frons with large truncate conical prominence with raised edges; eyes large, round; antennæ of male bipectinate with short branches, serrate towards base and apex; thorax clothed almost entirely with scales and without crests, the patagia fringed with long rough hair and scales mixed; tibiæ fringed with long hair; abdomen with dorsal hairy crest at base only. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing with large black discoidal lunule..... *capensis.*
B. Hind wing without discoidal lunule ..... *septentrionis.*

4899. **Ovios capensis.**

Eudryas capensis, Herr.-Schäff. Aussereur. Schmett. ff. 115–116 (1853); Kirby, Cat. Lep. Het. p. 40.

Head and thorax white; palpi black, the 2nd joint fringed with orange hairs in front and the extremity of 2nd and 3rd joints orange; frons, vertex and back of head with black bars; tegulæ with slight black line at base near sides and black band near tips; patagia and thorax with some black scales, the patagia fringed with long orange hair; pectus and legs orange, the fore tibiæ and the

tarsi banded black and white ; abdomen orange with dorsal, lateral, and sublateral series of black spots. Fore wing pale yellow-green ; a black spot at base edged with white and a white patch above base of vein 1 ; the costa irrorated with black to beyond middle, expanding on medial area and to middle of cell between the stigmata, the lines absent ; a large wedge-shaped white patch in, just below,

Fig. 204.—*Ovios capensis*, ♂. ½.

and beyond the cell, extending as a fascia on costa to apex ; orbicular round, deep red edged with yellowish and a few black scales and with some white scales in centre ; reniform a rather narrow lunule, deep red edged with yellowish, its lower part and upper extremity defined by black, some white in centre and in lower part ; a black point below costa towards apex ; a broad terminal white band with diffused lunulate black line on it before termen, with red patches on it below costa and above inner margin, and series of large terminal red lunules beyond it slightly defined by white ; cilia whitish with a black line through them. Hind wing orange-yellow with large black discoidal lunule and subterminal series of rather triangular black spots interrupted at submedian fold. Underside of fore wing yellow with the orbicular and reniform black ; traces of a curved postmedial line from costa to vein 2, more prominent and diffused between veins 7 and 4.

Hab. Natal, Karkloof (*Marshall*), 1 ♂, Durban (*Gueinzius*), 1 ♂, 1 ♀ ; Cape Colony, Pondoland, Nggeleni (*Swinny*), 1 ♀, Caffraria (*Sir A. Smith*, *Trimen*), 3 ♂, 1 ♂. *Exp.* 44–52 millim.

4900. **Ovios septentrionis**, n. sp. (Plate CXLVI. fig. 8.)

♀. Head white mixed with black ; palpi orange with lateral black spots on the joints ; tegulæ orange at base, deep red at tips ; thorax deep red ; patagia white mixed with black and fringed with orange hair, the metathorax with some orange hair ; pectus and legs orange, the fore and mid tibiæ and the tarsi irrorated with black and white ; abdomen orange with dorsal, lateral, and sublateral series of black spots, the basal crest red. Fore wing pale yellow-green ; the base obliquely red, edged with white from below costa to inner margin ; the costa irrorated with black to beyond middle, expanding on medial area and between the stigmata to middle of cell ; the

lines absent; orbicular oblique elliptical, deep red defined by black and with slight black striga in centre; reniform a rather V-shaped lunule, defined by black except above and on upper part of inner side where it is defined by red; a large triangular white patch in, below, and beyond cell, extending below end of cell to submedian fold, its outer edge running obliquely to costa towards apex; a broad terminal white band with black-irrorated lunulate band on it before termen, with a red patch on it on inner area and red patch on inner edge of the white band on costal area; a terminal series of black lunules; cilia black and whitish with slight yellowish line at base. Hind wing orange-yellow with subterminal series of small round black spots interrupted at submedian fold. Underside of fore wing yellow, the reniform and small orbicular black, a curved subterminal series of rather triangular black spots except towards tornus, diffused towards apex; hind wing with black discoidal point.

Hab. Mashonaland (*Dobbie*), 1 ♀ type. *Exp.* 60 millim.

Genus **LEUCOVIS.**

	Type.
Leucovis, Hmpsn. Cat. Lep. Phal. B.M. vii. p. 8 (1908)	*alba.*
Perimagia, Strand, Deutsch. Ent. Zeit. 1909, p. 536	*alba.*

Proboscis fully developed; palpi porrect, short, moderately fringed with hair below; frons with large truncate conical prominence with raised edges and corneous plate below it; eyes large, round; antennæ of male minutely ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair, the fore tarsi with tufts of hair on the joints above; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4901. **Leucovis alba.**

Pristocerœa alba, Roths. Nov. Zool. iv. p. 183 (1897).

Head orange; palpi black, the extremities of 1st and 2nd joints

Fig. 205.—*Leucovis alba*, ♂. ½.

yellow; lower part of frons and antennæ black; neck and shoulders black; thorax yellowish white; pectus orange, the fore and mid tibiæ and the tarsi black; abdomen orange, the base yellowish

white. Fore wing yellowish white, the costa and termen narrowly black; cilia black mixed with some white. Hind wing white, the termen with slight black line between vein 6 and submedian fold and the cilia black between these points.

Hab. Br. C. Africa, Karonga (*Grogan*), 1 ♂; Mashonaland (*Dobbie*), 1 ♂, 1 ♀; Rhodesia, Sabakwe, 1 ♀; Transvaal (*Peal*), 2 ♂. *Exp.* 40–46 millim.

Genus **SEUDYRA.**

Type.

Seudyra, Stretch, Cist. Ent. ii. p. 19 (1875) ..... *transiens.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd typically moderate; frons with truncate conical prominence with raised edges at extremity; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales and without crests; fore tibiæ fringed with long hair, the mid and hind tibiæ moderately fringed; abdomen with dorsal series of hairy crests. Fore wing with the apex rounded, the termen evenly curved and typically not crenulate; vein 3 from close to angle of cell; 5 from well above angle; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Palpi with the 3rd joint long; hind wing with the termen slightly excised at submedian fold and the tornus lobed.

A. Fore wing with the postmedial line very oblique from costa to vein 4; hind wing without discoidal spot ..... *venosa.*

B. Fore wing with the postmedial line nearly erect and slightly incurved from costa to vein 4; hind wing with black discoidal spot ..... *subflava.*

4902. Seudyra venosa.

Seudyra venosa, Moore, P. Z. S. 1879, p. 389; Waterh. Aid, ii. pl. 131. f. 5; Hmpsn. Moths Ind. ii. p. 156; Kirby, Cat. Lep. Het. p. 38.

Head and thorax dark cholocate red-brown mixed with some greyish ochreous; tegulæ ochreous at tips; pectus and legs orange, the fore and mid tibiæ irrorated with fuscous; abdomen orange, the crests black-brown. Fore wing deep chocolate red-brown, the costal half to postmedial line thickly irrorated with ochreous, extending to just below cell and vein 2 and beyond the postmedial line to termen between vein 4 and tornus, the veins striated with ochreous except vein 1, the inner area deep red with some purplish plum-colour on middle of inner margin and beyond postmedial line, the apical area deep red to vein 5 with a plum-coloured patch below apex and another between veins 5 and 3 beyond the postmedial line; subbasal line represented by a slight ochreous striga from cell; antemedial line obsolete on costal half, ochreous and erect below the cell with some plum-colour defined on inner side by a white line before it in submedian interspace; orbicular and reniform large, defined by ochreous, the former elongate elliptical, just touching the latter

which is broad and oblique, extending to well below the cell; post-medial line ochreous, double and obliquely incurved to vein 4, then bent inwards with a downward curve to vein 2 below end of cell, then obliquely incurved to inner margin, single below the submedian fold and defined by blackish on inner side; subterminal line slight, white, interrupted, excurved beyond the plum-coloured patches below apex and vein 5, angled inwards in discal fold and slightly outwards below submedian fold, then bent inwards and oblique to inner margin beyond postmedial line, a terminal series of small dark lunules; cilia ochreous mixed with blackish towards apex and with dark line near base. Hind wing orange with the terminal area black from apex to submedian fold, broad at

Fig. 206.—*Seudyra venosa*, ♂. ½.

costa, the inner edge oblique and angled inwards in submedian fold, followed by two dark lines with an orange line between them to near tornus, above which there is a triangular deep red-brown patch and point above it nearer submedian fold; cilia ochreous with a dark line near base. Underside of fore wing with the basal area yellow, its outer edge oblique; the costal area yellow to post-medial line, the terminal half brown suffused with red towards apex, a white bar across end of cell somewhat constricted at middle, and curved band beyond the cell from below costa to below vein 2, its inner edge angled outwards beyond lower angle of cell and again outwards at vein 2, the termen with diffused triangular ochreous white marks, with small dark spots on them from apex to vein 3.

Hab. Punjab, Almorah (*Boys*), 1 ♀; Sikhim (*Atkinson*), 1 ♂, 2 ♀ type. *Exp.* 50–60 millim.

4903. Seudyra subflava.

Seudyra subflava, Moore, A. M. N. H. (4) xx. p. 85 (1877); Kirby, Cat. Lep. Het. p. 38; Staud. Cat. Lep. pal. p. 258.
Zalissa jankowskii, Alph. Rom. Mém. ix. p. 151, pl. 11. f. 2 (1897).

Head and thorax dark chocolate-brown largely mixed with ochreous, the hair at extremities of patagia and metathorax dark with a metallic blue gloss; palpi with the 2nd joint dark at sides; pectus and legs orange, the fore and mid tibiæ ochreous mixed with dark brown; abdomen orange with dorsal series of dark spots, the crests brown mixed with metallic blue scales. Fore wing deep chocolate-brown, the costal half to postmedial line thickly irrorated

with ochreous, extending to submedian fold and beyond the postmedial line extending to termen between vein 3 and tornus, the median nervure and veins rising from it and the submedian fold streaked with ochreous, the inner and postmedial areas chocolate-red with some plum-colour on medial part of inner margin and before the subterminal line from below costa to vein 3; subbasal line represented by a faint oblique ochreous striga from costa; antemedial line ochreous, indistinct and oblique from costa to middle of cell, then erect and slightly sinuous, below submedian fold with slight white line on inner side to vein 1, and defined by blackish on outer side; orbicular and reniform with ochreous annuli, the former rather small, elongate elliptical, the latter large and extending to well below the cell; postmedial line ochreous, double, incurved from costa to vein 4, then bent inwards to submedian fold below end of cell, then single defined by blackish on inner side, oblique and slightly sinuous to inner margin, subterminal line bluish white and waved from costa to vein 3, crossed by a wedge-shaped blackish mark defined by ochreous above vein 5 from near termen, below vein 3 ochreous, angled inwards to postmedial line at vein 2 and with slight dark marks beyond it, then angled outwards at vein 1, then again bluish white and bent inwards to inner margin beyond postmedial line; the terminal area irrorated with ochreous except towards apex, with fine waved ochreous line before termen with dark striæ beyond it; cilia ochreous mixed with brown and with dark line through them. Hind wing orange, the terminal area broadly dark brown suffused with red except towards apex, its inner edge oblique to vein 3, then angled inwards in submedian fold and on vein 1, with large orange lunule on it above tornus; a small black discoidal spot; a waved orange line before termen from vein 4 to tornus; cilia white with dark lines near base and at tips. Underside of both wings orange with black discoidal spots, large on fore wing, a broad terminal red band except towards tornus of hind wing, above which there is a red spot, the inner edge of the band on both wings excurved.

Hab. E. Siberia, Ussuri; Japan, Tokio (*Fenton*), 1 ♂, Yokohama (*Jonas*, *Manley*), 1 ♂, 2 ♀; Corea, Gensan (*Leech*), 1 ♂; N. China (*Fortune*), 2 ♂; C. China, Kiukiang (*Pryer*), 1 ♂ type, Ichang (*Mrs. Pratt*), 1 ♀; W. China, Kwei-chow, 1 ♀. *Exp.* 44–52 millim.

Sect. II. Palpi with the 3rd joint moderate, hind wing with the termen evenly curved.

A. Fore wing with the apex produced, the termen obliquely curved.
  a. Hind wing without subterminal band ..... *flavida*.
  b. Hind wing with black subterminal band.
    a^1. Hind wing without discoidal spot ..... *longipennis*.
    b^1. Hind wing with black discoidal spot.
      a^2. Hind wing with the discoidal spot small..... *catocalina*.
      b^2. Hind wing with the discoidal spot large..... *mandarina*.

*4904. Seudyra flavida. (Plate CXLVI. fig. 9.)

Seudyra flavida, Leech, Entom. xxiii. p. 110 (1890); Kirby, Cat. Lep. Het. p. 38.

♂. Head and thorax purplish black; pectus and legs orange, tibiæ and tarsi with some fuscous scales; abdomen orange with slight dorsal series of fuscous points. Fore wing whitish tinged with ochreous and strongly irrorated with black, the inner area chocolate-red with leaden fascia at base, bands before the antemedial and beyond the postmedial fulvous lines and large patch between them, the outer edge rounded to before tornus; orbicular elliptical, reniform very large, both blackish edged with white with ochreous annuli and leaden centres; the postmedial line fulvous defined by black on inner side, incurved from costa to vein 4 where it is angled, then oblique and sinuous; a large apical chocolate-red patch with purplish leaden centre defined on its outer edge by an obscure dentate white line; a terminal series of dark striæ. Hind wing orange with slight discoidal spot and traces of irregular subterminal line. Underside of fore wing orange, the patch on inner area, orbicular and reniform black, the apical patch red; hind wing with the subterminal line red, waved, incurved at vein 6, angled outwards at vein 4, and with diffused red beyond it.

Hab. W. China, Chang-yang (*Pratt*), 1 ♂, 1 ♀ type, Moupin (*Kricheldorff*), 1 ♂, Wa-ssu-kou, 1 ♂, Chow-pin-sa, 1 ♂, Chia-kou-ho (*Pratt*), 1 ♂. *Exp.* 66 millim.

4905. Seudyra longipennis.

Catocala longipennis, Wlk. xxxiii. 934 (1865); Butl. Ill. Het. B. M. v. p. 19, pl. 82. f. 8; Hmpsn. Moths Ind. ii. p. 156; Kirby, Cat. Lep. Het. p. 38.

♂. Head and thorax dark chocolate red-brown with a silvery blue gloss; tegulæ with yellow and red line at base; pectus and legs orange-yellow, the fore tibiæ irrorated with red and fringed with greyish hair; abdomen orange with the dorsal crests black. Fore wing with the costal half to postmedial line, median nervure and vein 2, and thence obliquely to termen at vein 4 and tornus yellow irrorated with chocolate-red, the area below the cell to postmedial line deep chocolate-red, the inner area from above vein 1 leaden grey; the apical area chocolate-red to vein 5 with leaden-grey patch from below costa to below vein 6; antemedial line obsolete on costal half, then yellow, oblique to below vein 1, with leaden-grey band on inner side and defined by black on outer; orbicular small, elongate elliptical with yellow centre defined by reddish scales with small reddish spot towards outer edge and ill-defined ochreous annulus; reniform very large, with yellowish centre defined by chocolate-red rather broken up into spots, a reddish lunule at centre and some silvery suffusion on the veins, and with ill-defined ochreous annulus; postmedial line indistinct, double, filled in with yellowish

and defined by yellowish on outer side, obliquely incurved from costa to vein 4 where it is angled outwards, then oblique and below vein 2 slightly incurved, below submedian fold defined by black on inner side and with leaden-grey band on outer followed by a deep crimson-red patch; a series of deep crimson-red striæ just before termen with some yellow before and beyond them beyond the apical red patch; a very slight brown terminal line; cilia brown mixed with yellow. Hind wing orange-yellow with irregular black-brown subterminal band, towards apex almost extending to termen and with some reddish beyond it, its outer edge slightly dentate at the veins and its inner edge angled inwards in discal fold and expanding below vein 2. Underside of fore wing with the basal and costal

Fig. 207.—*Seudyra longipennis*, ♂. ½.

areas yellowish, the apical area suffused with red, the rest of terminal area pale brownish becoming whitish at tornus, the cell white except towards base, the orbicular and reniform black-brown, the latter conjoined by a patch above base of vein 2 with a large black-brown patch below the cell extending from before middle to near tornus; hind wing with a black discoidal point, the apical area suffused with red bounded by the sinuous red postmedial line which is strongly excurved at vein 4, then oblique to submedian fold and bent outwards to vein 1 where it terminates.

Hab. Sikhim (*Lidderdale*, *Dudgeon*), 5 ♂; Assam, Silhet, 1 ♂ type. *Exp.* 64–70 millim.

4906. **Seudyra catocalina.**

Phægorista catocalina, Wlk. xxxv. 1859 (1866); Butl. Ill. Het. B. M, v. p. 20, pl. 82. f. 9; Kirby, Cat. Lep. Het. p. 38.
Zalissa exiguifascia, Swinh. Cat. Het. Mus. Oxon. i. p. 167 (1892); Hmpsn. Moths Ind. ii. p. 156.

Head and thorax dark reddish brown tinged with leaden grey; palpi orange at base; tegulæ with slight orange line near base and leaden-grey tips; fore legs grey mixed with brown; pectus and mid and hind legs orange-yellow, the mid tibiæ with some brown; abdomen orange with the dorsal crests black. Fore wing with the costal half to postmedial line extending to median nervure and

vein 2 dark brown thickly irrorated with yellow, the submedian interspace to subterminal line and the apical area to vein 4 deep crimson-red, the inner area and terminal area below vein 4 brownish suffused with leaden grey, the base of median nervure and vein 1 just beyond the antemedial line with slight white streaks; antemedial line yellow, obliquely curved, diffused on costal area, from cell to inner margin, defined on each side by dark brown and with whitish line before it from cell to vein 1; orbicular and reniform large, blackish with white annuli, the former round, its centre irregularly defined by yellow, the latter oblique, its upper extremity produced and its lower extending to well below the cell, its centre defined by blue-white; postmedial line double, yellow, very slightly sinuous, obliquely incurved from costa to vein 4 where it is strongly angled outwards, then incurved, below submedian fold defined by dark brown on inner side and with the outer line whitish; the apical area with leaden-grey patch from below costa to below vein 6 with whitish mark below costa, dentate mark below vein 7 and slight streak below vein 6; a somewhat diffused waved whitish subterminal line from below vein 4 to inner margin; a slight somewhat sinuous yellow line just before termen which is deep chocolate-red; cilia black-brown with a slight yellowish line at base. Hind wing deep orange; a small black discoidal spot; a very irregular subterminal band between veins 6 and 1, its outer edge dentate, its inner edge angled outwards at vein 5, then strongly incurved. Underside of fore wing orange-yellow, the orbicular and reniform black, a large black-brown patch in submedian interspace below middle of cell and base of vein 2, the apical area suffused with crimson, a slight crimson postmedial line between veins 4 and 2 and traces of a waved subterminal line from costa to vein 2; hind wing with black discoidal spot, the apical area suffused with crimson bounded on inner side by the reddish postmedial line, which is angled inwards at discal fold and outwards at vein 4, then incurved and brownish.

Hab. Sikhim (*Russell*, *Atkinson*, *Lidderdale*, *Möller*), 7 ♂, 1 ♀ type. *Exp.* 56–60 millim.

4907. Seudyra mandarina. (Plate CXLVI. fig. 10.)

Scudyra mandarina, Leech, Entom. xxiii. p. 110 (1890); Kirby, Cat. Lep. Het. p. 38.

♂. Head and thorax dark brown mixed with greyish ochreous; pectus and legs ochreous yellow, the tibiæ and tarsi irrorated with brown; abdomen orange dorsally irrorated with black, the crests black. Fore wing with the costal half to postmedial line, extending to just below cell and vein 2, dark brown thickly irrorated with ochreous, the median nervure and veins rising from it with pale streaks, the inner and terminal areas purple plum-colour with deep red patches before the antemedial and beyond the postmedial lines, the apical area red to vein 4 with a plum-coloured patch at middle; antemedial line obsolete on costal area, double and erect

below the cell; orbicular and reniform large with dark chocolate centres suffused with violaceous white and slight ochreous annuli, the former elongate elliptical, the latter oblique elliptical and extending to below cell; postmedial line double, obliquely incurved from costa to vein 4 where it is angled outwards, oblique and slightly waved to vein 2, then more erect; faint traces of a diffused curved white subterminal line; a fine ochreous line just before termen; cilia reddish brown. Hind wing orange-yellow; a large round black discoidal spot; the submedian interspace clothed with black hair to the very irregular black subterminal band, expanding into patches below veins 6 and 2 and excurved at middle. Underside of fore wing orange-yellow with slight black streak in base of cell, the orbicular, reniform, and a patch below middle of cell and base of vein 2 black, the apical area slightly suffused with red beyond the diffused reddish postmedial line from below costa to vein 2; hind wing with the subterminal band much narrower, from costa to vein 2.

Hab. W. China, Chang-yang (*Pratt*), 1 ♂ type. *Exp.* 50 millim.

B. Fore wing with the apex not produced, the termen much less obliquely curved.
  a. Both wings with the termen not crenulate.
    a^1. Hind wing with quadrate blackish spot above tornus separate from the terminal band ..... *venusta*.
    b^1. Hind wing without quadrate black spot above tornus.
      a^2. Hind wing with the terminal band expanding into a large quadrate patch above tornus.
        a^3. Fore wing with the costal area and cell suffused with white to postmedial line and thence obliquely to termen above tornus ..... *interposita*.
        b^3. Fore wing without white suffusion ..... *bala*.
      b^2. Hind wing with the terminal band not expanding into a large quadrate patch above tornus.
        a^3. Hind wing on underside with the dark terminal band extending on costa to middle ..... *transiens*.
        b^3. Hind wing on underside with the dark terminal band not extending to middle of costa ..... *subalba*.

4908. Seudyra venusta.

Seudyra venusta, Leech, P. Z. S. 1888, p. 614, pl. 31. f. 2; Kirby, Cat. Lep. Het. p. 38.

Head and thorax clothed with dark brown and white hair; pectus and legs mostly white; abdomen orange with the dorsal crests black. Fore wing whitish irrorated with black-brown; orbicular and reniform large, black, irrorated with white, the inner area with a leaden plum-coloured patch with fiery-red at each extremity extending from near base to near tornus, traversed by the pale ante- and postmedial lines, the former double, the inner line excurved at vein 1, the outer defined by black-brown on outer side, the latter double, incurved from costa to vein 4, excurved to vein 2, then incurved and defined on inner side by black-brown; a large apical black patch with fiery-red patch on it and leaden spots with

whitish marks on them above vein 5 and below 4; a waved whitish line close to termen. Hind wing orange with black discoidal spot; a black-brown terminal patch from costa to vein 2, angled inwards in discal fold, then narrow and dentate; a large spot above tornus. Underside of fore wing white; the orbicular, reniform, a large patch on middle of inner area, and suffusion beyond the postmedial line black; hind wing with the dark apical area suffused with yellow.

Hab. Corea, Gensan (*Leech*), 1 ♂ type; C. China, Chang-yang (*Pratt*), 2 ♀; W. China, Ta-chien-lu (*Pratt*), 2 ♂. *Exp.* 42–50 millim.

4909. Seudyra bala. (Plate CXLVI. fig. 11.)

Phægorista bala, Moore, P. Z. S. 1865, p. 795; Hmpsn. Moths Ind. ii. p. 156; Kirby, Cat. Lep. Het. p. 38.

♂. Head and thorax fuscous brown slightly mixed with grey hair; pectus and legs orange, the fore legs brown and grey and the mid and hind tarsi irrorated with brown; abdomen orange with dorsal series of black bands. Fore wing fuscous brown irrorated with greyish ochreous except on inner and apical areas, the irroration on costa whitish, the inner area with chocolate-red patches near base and towards tornus, the latter round and defined by white; the area below median nervure and the apical area suffused with chocolate; antemedial line obsolete on costal half, below the cell indistinct, greyish ochreous, erect; orbicular and reniform large, dark brown with slight greyish ochreous annuli, the former round, the latter oblique elliptical and extending to well below cell; postmedial line indistinct, greyish, obliquely incurved from costa to vein 4, excurved to vein 2, then bent inwards to below end of cell and incurved to inner margin, a faint oblique straight line beyond it from costa to vein 4: a faint curved subterminal whitish line; cilia dark brown with a slight greyish line at base. Hind wing orange; some blackish hair at base of submedian fold; a small black discoidal spot, a broad black-brown terminal band with sinuous inner edge, expanding at costa to middle, strongly excurved at middle and expanding on inner area leaving the inner margin narrowly orange; cilia brown at base, white at tips. Underside of fore wing black-brown with white streak below base of costa, a large wedge-shaped white patch in cell with the round blackish orbicular on it; an oblique white band beyond the cell with its lower extremity angled inwards at vein 2; a white patch at tornus; hind wing with diffused brown terminal band from apex to vein 2, expanding at costa to middle, and large black spot above tornus.

♀. Abdomen with very large anal tuft.

Hab. Sikhim, 7000–10,000′ (*Atkinson, Lidderdale, Möller, Dudgeon*), 1 ♂, 6 ♀ type. *Exp.* 46–50 millim.

4910. Seudyra interposita, n. sp. (Plate CXLVIII. fig. 11.)

♀. Head and thorax greyish ochreous mixed with some black, the metathorax with some metallic blue scales; palpi black, the extremities of the joints white; pectus, legs, and abdomen orange, the last with dorsal series of black spots. Fore wing with the costal half to postmedial line and thence obliquely to termen above tornus white irrorated with fuscous-brown scales except before the postmedial line from below costa to vein 3, the inner and apical areas deep chocolate-red with patches of violaceous grey on inner medial area and below apex; subbasal line represented by faint double oblique black striæ from costa; a black point in cell before the antemedial line, which is obsolete to median nervure, then double, ochreous filled in with plum-colour, erect; orbicular and reniform with white annuli, their centres irrorated with black and a few silvery scales, the former round, the latter oblique elliptical; postmedial line double, ochreous white, filled in with plum-colour towards inner margin, obliquely incurved from costa to vein 4 near subterminal line, incurved below vein 2; subterminal line indistinct, whitish, waved, angled inwards in discal fold, obsolete towards costa; a terminal series of black striæ slightly defined on inner side by white; cilia blackish with fine ochreous white lines at base and middle. Hind wing orange; a small black discoidal spot; a terminal black band broadly rounded on apical area and quadrately dilated on tornal area; cilia white at tips, yellow towards tornus. Underside of fore wing with the stigmata black-brown with white in cell before and between them and broad oblique white band beyond them with sinuous outer edge; hind wing with the terminal band greyer ending in a blackish patch in submedian interspace.

Hab. W. China, Chin-fu-san (*Maw*), 1 ♀ type. *Exp.* 48 millim.

4911. Seudyra transiens.

Eusemia transiens, Wlk. vii. 1588 (1856); Hmpsn. Moths Ind. ii. p. 155; Kirby, Cat. Lep. Het. p. 38.
Phægorista catocaloides, Wlk. Journ. Linn. Soc., Zool. vi. p. 87 (1862).
Agarista ægoceroides, Feld. Reis. Nov. pl. 107. f. 10 (1878).
Seudyra dissimilis, Swinh. Trans. Ent. Soc. 1890, p. 174.

Head and thorax dark brown mixed with grey; tegulæ with diffused blackish medial line; fore legs grey mixed with brown; pectus and mid and hind legs orange-yellow, the mid tibiæ irrorated with brown; abdomen orange-yellow, the dorsal crests and extremity black. Fore wing dark brown irrorated with greyish ochreous on basal area, on costal area to postmedial line, on the veins and on terminal area above tornus; a more or less developed oblique diffused white band beyond the cell from costa to vein 2, sometimes connected with a patch at tornus; a subbasal deep crimson-red patch above vein 1 with smaller patch below it on inner margin; antemedial line indistinct, ochreous, oblique from costa to below cell, then erect, defined on each side by crimson-red

from cell to inner margin and with leaden-grey band before it; the medial area with crimson-red patch below the cell and leaden-grey patch on inner margin; orbicular and reniform very large, defined by ochreous, the former filled in with crimson, round, the latter with leaden-grey centre and crimson annulus, oblique elliptical and extending to well below cell; postmedial line ochreous, obliquely incurved from costa to vein 4, then excurved and slightly dentate to vein 2, then incurved and defined by crimson on each side followed by a leaden-grey patch, a similar indistinct line beyond it, below vein 2 excurved to tornus and with crimson patch before it; the terminal area deep crimson-red with faint waved whitish subterminal line interrupted at middle and with leaden-grey patches before it above and below vein 6 and below vein 4; a slight somewhat sinuous whitish line just before termen; cilia black-brown mixed with some grey and with slight pale line at base. Hind

Fig. 298.—*Seudyra transiens*, ♂. ½.

wing orange-yellow, the terminal area broadly black-brown with sinuous inner edge expanding on costal area to before middle. Underside of fore wing black-brown with triangular white patch in base of cell, rather oblique bar across the cell towards extremity somewhat constricted at middle, oblique white band beyond the cell between veins 7 and 2, somewhat constricted at middle and with its lower extremity curved inwards, and spot on termen above tornus.

Hab. Sikhim (*Atkinson*, *Lidderdale*, *Möller*), 5 ♂, 1 ♀; Assam, Khásis, Nágas; Burma, Mandalay, 1 ♂ type *dissimilis*, Toungoo (*de Nicéville*), 1 ♂; Malacca, Selangor (*Robinson*), 1 ♀; Borneo, Sarawak (*Wallace*), 1 ♂; Java (*Horsfield*)), 2 ♂, 3 ♀ type; Bali (*Doherty*), 1 ♀. *Exp.* 38–58 millim.

Larva. Moore, Lep. E. I. Co. ii. p. 290, pl. 13. ff. 5, 5*a*; Piepers, Tijd. v. Ent. xlviii. p. 199, pl. vii. f. 7.

Black, the 1st and 11th somites yellow with black spots; lateral tufts of blue hairs and scattered long black hairs. Food-plant, "Galing" (*Vitis trifolia*). 12.

4912. Seudyra subalba. (Plate CXLVI. fig. 12.)

Seudyra subalba, Leech, Entom. xxiii. p. 110 (1890); Kirby, Cat. Lep. Het. p. 38.

Head and thorax dark chocolate-brown mixed with some white hair; palpi fringed with white hair at base; pectus and legs orange, the fore tibiæ and tarsi white mixed with dark brown,

the mid and hind tibiæ whitish; abdomen orange with the crests black. Fore wing with the costal half dark brown irrorated with white to postmedial line, extending to median nervure and vein 2 and beyond postmedial line to termen between vein 4 and tornus, a whiter band beyond the cell, the inner area chocolate-red with some bright red before antemedial and beyond postmedial lines and some plum-colour at middle of inner margin; the apical area chocolate-red to vein 4 with plum-coloured patch below apex; antemedial line obsolete on costal half, below the cell slight, white, double, erect, slightly waved; a slight white streak on middle of vein 1; orbicular and reniform large, with dark centres irrorated with white and white annuli, the former round, the latter oblique elliptical and extending to well below cell; postmedial line obliquely incurved from costa to vein 4, below vein 3 incurved, and below submedian fold filled in with plum-colour; subterminal line formed of rather diffused white striæ, arising below costa and interrupted between veins 6 and 5 by a dark patch; a series of white striæ just before termen with dark striæ beyond them; cilia fuscous with a fine white line through them, below 2 wholly white. Hind wing orange-yellow with broad terminal black band narrowing to tornus, its inner edge sinuous and excurved at middle; cilia tipped with white except towards tornus. Underside of fore wing fuscous with triangular white patch in base of cell, a bar across cell near extremity constricted at middle, and oblique band beyond the cell from below costa, its lower extremity conjoined to a patch at tornus and its inner edge angled inwards at vein 2; both wings with series of slight white lunules before termen except towards tornus.

Hab. C. China, Ichang (*Mrs. Pratt*), 1 ♂; W. China, Changyang, 3 ♂ type, Omei-shan, 1 ♂, Washan (*Pratt*), 1 ♂. *Exp.* 40–52 millim.

b. Both wings with the termen crenulate.
  a^1. Fore wing with curved white patch beyond the cell ... *albifascia.*
  b^1. Fore wing with quadrate white spot in end of cell ..... *nepcha.*

4913. Seudyra albifascia.

Catocala albifascia, Wlk. xxxiii. 933 (1865); Hmpsn. Moths Ind. ii. p. 157.

Head and thorax dark chocolate-brown mixed with grey and white; pectus and legs orange, the fore tibiæ and tarsi brown ringed with white; abdomen orange with the crests large and red-brown. Fore wing deep chocolate-red, the inner and terminal areas suffused with purplish grey and irrorated with some white; a curved white patch beyond the cell from below costa to vein 2 with slightly waved outer edge and with some olive ochreous suffusion round it; a patch of olive ochreous suffusion from base of costa above and below median nervure to antemedial line, which is very indistinct, red, double, waved; orbicular a round red patch, the reniform a red bar; postmedial line indistinct, double, red filled

in with olive ochreous and with white at costa, minutely waved, excurved from costa to vein 3, then oblique, a slight whitish mark beyond it on costa; an indistinct, diffused, irregularly dentate, pale subterminal line, oblique below vein 4 and incurved at vein 2; a lunulate red terminal line; cilia dark brown with a fine whitish line at base. Hind wing orange, the terminal area black-brown to vein 1, expanding at costa to middle, its inner edge obliquely curved, slightly angled inwards at vein 2 and strongly at vein 1; a

Fig. 209.—*Seudyra albifascia*, ♂. ½.

white apical patch; the cilia tipped with white to below vein 3, then with white line through them. Underside of fore wing black-brown, the basal area orange except at costa, a slight white mark in end of cell, the band beyond the cell as above, the apex suffused with white; hind wing with the inner edge of terminal area evenly curved, the apical white patch larger.

Hab. Sikhim (*James*, *Atkinson*), 3 ♀; Bombay, Kanara; Burma, Moulmein (*Clerk*), 1 ♀ type, Rangoon (*Scott*), 3 ♀. *Exp.* 48–62 millim.

*4914. ? Seudyra nepcha.

Catocala nepcha, Moore, P. Z. S. 1867, p. 68; Hmpsn. Moths Ind. ii. p. 157.

Head black; antennæ yellow; thorax rufous brown; abdomen orange-yellow with dorsal and lateral series of black-brown spots. Fore wing rufous brown; some irregular black marks on basal area; a square white spot in end of cell; a narrow slightly curved postmedial white band with black inner edge and series of dentate black marks beyond it; a terminal series of black and grey lunules; cilia grey-brown. Hind wing orange-yellow with a broad black terminal band. Underside with the basal area yellow, the terminal area black; fore wing with a broad postmedial white band from costa to above tornus where there is a white spot; hind wing with a white medial patch from costa to lower angle of cell.

Hab. Sikhim. *Exp.* 70 millim. This species is unknown to me.

Genus ZALISSA.

Type.
Zalissa, Wlk. xxxiii. 936 (1865) ..... *catocalina*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately fringed with hair in front, the 3rd moderate, porrect; frons with rounded prominence with corneous plate below it; eyes large, round; antennæ of male with short fasciculate branches; thorax clothed with hair and scales mixed and without crests; tibiæ fringed with long hair; abdomen with large dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with curved white patch beyond the reniform ... *catocalina*.
B. Fore wing without white patch beyond the reniform ..... *pratti*.

4915. Zalissa catocalina.

Zalissa catocalina, Wlk. xxxiii. 936 (1865).

♀. Head grey; thorax red-brown with greyish dorsal fascia; pectus white; legs white mixed with brown, the tarsi brown ringed with white; abdomen orange-yellow, the crests red-brown, the ventral surface white banded with black. Fore wing whitish suffused and irrorated with red-brown and dark brown, the basal area and inner area below submedian fold with a purplish gloss, a curved white patch beyond the reniform between veins 7 and 2, the terminal area whiter from apex to vein 2; subbasal line double,

Fig. 210.—*Zalissa catocalina*, ♂. ½.

waved, from costa to submedian fold; antemedial line indistinct, double, very oblique from costa to submedian fold, then inwardly oblique and slightly excurved below vein 1; orbicular with faint pale annulus, round; reniform with dark centre and ill-defined whitish annulus, somewhat produced at upper extremity and angled inwards on median nervure; postmedial line double, strongly bent outwards below costa, somewhat oblique to vein 4, then very oblique and slightly waved below submedian fold, a curved very slightly waved white subterminal line slightly defined on each side by brown. Hind wing orange-yellow, the terminal area black-brown, at costa extending to middle, narrowing to tornus and with sinuous inner edge; some white on termen and the cilia white from vein 7 to discal fold, the cilia then blackish with a fine white line at base; a chocolate-red line on termen towards tornus with white line

before it. Underside of fore wing black-brown, the basal area yellow, orbicular and reniform black with white patch between them and curved white patch beyond the latter; hind wing with slight dark discoidal spot with whitish patch beyond it.

Hab. W. Australia (*Diggles*), 1 ♀ type, ♂ in Coll. Turner. *Exp.* 42 millim.

4916. Zalissa pratti. (Plate CXLVI. fig. 13.)

Hypocala pratti, Beth.-Baker, Nov. Zool. xiii. p. 249 (1906).

♀. Head and a dorsal fascia on thorax grey mixed with fuscous, sides of thorax red-brown; palpi white mixed with brown scales and with black-brown patches on 1st and 2nd joints; pectus, mid femora and hind legs yellow, fore femora and tibiæ fringed with pinkish and white hair, the fore and mid tibiæ white irrorated with fuscous and the tarsi fuscous ringed with white; abdomen yellow, with brown dorsal fascia, the crests red-brown. Fore wing reddish brown, the basal and inner area below submedian fold suffused with purple, the medial area with slight dark streaks on the veins and an oblique patch of dark suffusion beyond lower angle of cell before postmedial line; subbasal line double, slightly incurved, from costa to submedian fold, in which there is a fine dark streak from it to subterminal line; antemedial line double, obsolescent in submedian interspace, the two lines further apart at costa, oblique to submedian fold, angled outwards below vein 1 and strongly bent inwards to inner margin, some ochreous on medial part of inner margin; orbicular and reniform with slight pale annuli defined by dark brown, the former round, the latter with its centre suffused with dark brown, somewhat produced at upper extremity and angled inwards at median nervure; medial line very strongly bent outwards below costa and excurved to well beyond cell, then bent inwards to below angle of cell and waved to inner margin; postmedial line double, strongly bent outwards below costa, excurved to vein 4, then oblique, waved, a curved minutely waved white subterminal line slightly defined on each side by brown, the area beyond it suffused with white to vein 3; a fine red-brown line just before termen, reduced to striæ towards apex; cilia brown mixed with white towards apex and with pure white lines at base and middle. Hind wing orange-yellow, the terminal area black, at costa extending to middle, narrowing towards tornus and reduced to irroration, its inner edge curved; some white on termen and the cilia white from vein 7 to discal fold, the cilia then black with pure white line at base; a whitish streak before termen towards tornus. Underside of fore wing with the basal half yellow, the terminal half black with the costa reddish and some white on termen as above, a white bar beyond the cell between veins 7 and 3.

Hab. Br. New Guinea, Mt. Kebea (*Pratt*), 1 ♀, Dinawa, Aroa R. *Exp.* 40 millim.

Genus **PROTOSEUDYRA**, nov.

Type, *P. picta.*

Proboscis fully developed; palpi porrect, extending about the length of head, the 2nd joint moderately fringed with hair below, the 3rd short; frons with rounded prominence with minute pointed corneous process at middle; eyes large, round; antennæ of male ciliated; thorax clothed with hair and hair-like scales and without crests; fore tibiæ fringed with long hair, the mid and hind tibiæ moderately fringed with hair; abdomen with very large crest of curled metallic scales at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing whitish.
  a. Hind wing mostly suffused with red ..... *picta.*
  b. Hind wing not suffused with red ..... *secunda.*
B. Hind wing yellow ..... *flava.*

4917. Protoseudyra picta.

Caradrina picta, Hmpsn. Moths Ind. ii. p. 263 (1894); Swinh. A. M. N. H. (6) xv. p. 6 (1895).

Head and thorax reddish brown mixed with whitish; tarsi brown ringed with white; abdomen yellowish tinged with red-brown, the dorsal crest metallic black. Fore wing greyish almost entirely suffused with reddish brown, some whitish at base; antemedial line very indistinct, double, oblique, somewhat sinuous; claviform and orbicular absent; reniform a narrow dark brown lunule with some blood-red at lower angle of cell; medial line indistinct, brown, faintly defined by whitish on outer side, excurved from costa to vein 4, then incurved; postmedial line double filled in with whitish,

Fig. 211.—*Protoseudyra picta*, ♂. ½.

indistinct, excurved from costa to vein 5 where it is crossed by a blood-red streak, then incurved, a blood-red patch beyond it on costa; traces of a minutely waved subterminal line; a fine red terminal line. Hind wing whitish suffused with dull red except on discal and terminal areas; a large reddish discoidal spot and postmedial band excurved to vein 4, then incurved and dilated; tornus red. Underside of both wings whitish with large round dark discoidal spots and diffused red postmedial band; fore wing with the disk suffused with brownish.

Hab. W. China, Chang-yang (*Pratt*), 1 ♂, 2 ♀; Sikhim; Assam, Khásis, 2 ♂ type. *Exp.* 28–34 millim.

4918. **Protoseudyra secunda.** (Plate CXLVI. fig. 14.)

Caradrina secunda, Leech, Trans. Ent. Soc. 1900, p. 121.

♂. Head and thorax white mixed with dark brown; tarsi brown ringed with white; abdomen whitish mixed with brown, the ventral surface yellowish, the dorsal crest metallic blackish. Fore wing dull red irrorated with white; antemedial line indistinct, waved, angled outwards on subcostal and median nervures; claviform and orbicular absent; reniform dull red, ill-defined, with narrow blackish lunule in centre; medial line brownish, excurved beyond the cell, then incurved and somewhat dentate, the area beyond it pale greyish to the postmedial line with white streaks on veins 6 and 5; postmedial line fine, double filled in with white, excurved from costa to vein 5, then incurved and minutely waved, crossed by a slight red streak at vein 5; an indistinct waved subterminal line excurved below vein 7 and at middle. Hind wing ochreous white; a faint reddish discoidal spot; traces of a curved postmedial line; two red striæ filled in with whitish on inner area above tornus which is tinged with yellow; a fine reddish terminal line. Underside ochreous whitish; fore wing with the basal half and postmedial area tinged with dull red, an ill-defined dark discoidal spot; hind wing with reddish discoidal spot and traces of a sinuous subterminal line.

Hab. W. China, Chang-yang (*Pratt*), 1 ♂, Ta-chien-lu (*Pratt*), 2 ♂ type. *Exp.* 34-46 millim.

4919. **Protoseudyra flava.** (Plate CXLVI. fig. 15.)

Caradrina flava, Leech, Trans. Ent. Soc. 1900, p. 121.

♂. Head and thorax clothed with greyish-white and brown hair; palpi white below at base; pectus white; tarsi brown ringed with white; abdomen dorsally banded brown and whitish, ventrally yellowish, the dorsal crest metallic. Fore wing chocolate-red irrorated with white scales and hair except on basal area from costa to vein 1; antemedial line double filled in with greyish, oblique, angled outwards on median nervure; claviform and orbicular absent; reniform a narrow greyish lunule defined by chocolate-brown and with a deep chocolate lunule on its inner side, the veins beyond the cell streaked with white; an indistinct medial line excurved beyond the cell, then incurved and approximated to the postmedial line, which is double filled in with whitish, excurved from costa to vein 5, then oblique, slightly waved and incurved between veins 3 and 1, crossed by a blood-red streak on vein 5; a red patch on apical part of costa with the indistinct waved subterminal line arising from it, defined on inner side by slight red marks; a terminal series of small red lunules. Hind wing yellow; some brown hair along vein 1 which is crossed by two brown striæ filled in with whitish above tornus which is reddish; a fine orange terminal line; cilia pale brownish with a whitish line through

them. Underside of fore wing whitish, the basal and costal areas suffused with yellow, a reddish discoidal spot and bisinuate postmedial line with some reddish suffusion beyond it; hind wing yellow with reddish discoidal spot, minutely waved postmedial line with the interspaces beyond it whitish, and terminal series of small red lunules.

Hab. C. China, Ichang (*Mrs. Pratt*), 1 ♂ type. *Exp.* 32 millim.

Genus **OPSYRA**, nov.

Type, *O. chalcoela.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to vertex of head and moderately fringed with scales in front, the 3rd short, porrect; frons smooth; eyes large, round; antennæ of male minutely ciliated; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests of very long spatulate scales, the patagia fringed with long rough scales at extremity; tibiæ fringed with rather long hair; abdomen with large crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4920. Opsyra chalcoela.

Callyna chalcoela, Hmpsn. J. Bomb. Soc. xiv. p. 208 (1902).

Head and tegulæ yellow; palpi red-brown with a few white scales; frons with lateral brown spots; antennæ brown; thorax white, the scales at end of patagia and metathoracic crest yellow; pectus ochreous white; legs red-brown, the tarsi ringed with white; abdomen fulvous yellow, the base and ventral surface whitish. Fore wing golden olive-brown, the costal area chocolate-brown irrorated with silvery blue, the inner area and the terminal area except at apex pale brassy yellow with an olive tinge; a slight silvery blue line from base of costa, bent outwards above vein 1,

Fig. 212.—*Opsyra chalcoela*, ♂. ½.

followed by a yellow striga from below costa; antemedial line slight, silvery blue, excurved, angled inwards in submedian fold and ending at vein 1; claviform represented by a slight silvery blue mark beyond its extremity; orbicular absent; reniform with yellowish-white annulus and silvery white spot in centre, round; an oblique silvery blue shade from costa to above reniform; postmedial line silvery blue and strongly bent outwards below costa,

yellowish white between veins 6 and 3 with some black scales on its outer edge, then almost obsolete and incurved, with a black spot on it at inner margin and silvery blue mark before it on vein 2, some white points beyond it on costa; subterminal line slight and silvery white from below vein 4 to above vein 1, slightly waved and angled inwards at vein 2, a fine white line beyond it on termen; some silvery blue scales on termen from apex to the white line; cilia red-brown, greyish at tips. Hind wing yellowish white slightly irrorated with brown, except on inner area; postmedial and subterminal black striæ from inner margin; a terminal series of brown striæ; cilia white, brownish at apex: the underside yellowish white, the costal half irrorated with red-brown, a brown discoidal spot with diffused bar above it from costa and a maculate postmedial line incurved below vein 3.

Hab. W. China, Ta-chien-lu (*Pratt*), 1 ♂; Sikhim, 5000–10,000′ (*Dudgeon*, *Pilcher*), 1 ♂, 1 ♀ type. *Exp.* 36–42 millim.

Genus **LEUCOGONIA**, nov.

Type, *L. eceicei*.

Proboscis fully developed; palpi porrect to well beyond frons, the 2nd joint rather broadly scaled, the 3rd rather long, dilated at extremity and down-turned; frons with small truncate conical corneous prominence at middle and corneous plate below it; eyes large, round; antennæ of male almost simple; thorax clothed with hair mixed with some scales and without crests; tibiæ moderately fringed with hair; abdomen clothed with rough hair towards base and with dorsal crest at base only. Fore wing broadly triangular, the apex rounded, the termen oblique, nearly straight; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with the inner margin long; veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing with the terminal band expanding widely on apical area ..... *eceicei*.
B. Hind wing with the terminal band not expanding on apical area ..... *cebeensis*.

4921. **Leucogonia eceicei.**

Zalissa ekeikei, Beth.-Baker, Nov. Zool. xiii. p. 211 (1906).

Head ochreous slightly tinged with rufous; palpi black-brown, the extremity of 2nd joint and the 3rd joint white; antennæ whitish;

Fig. 213.—*Leucogonia eceicei*, ♂. ½.

thorax dark brown mixed with bluish white and with broad dorsal ochreous fascia tinged with rufous; pectus and legs white and

yellow, the fore legs brown mixed with white; abdomen yellow, the basal crest orange followed by some fuscous hair. Fore wing bright rufous; the costal edge white; a broad white fascia on inner margin irrorated with dark brown, thickly at the margin and slightly defined by black above; the terminal area chocolate-brown irrorated with white, thickly towards margin and defined on inner side by a fine white line, straight to vein 2, then forming a small lunule conjoined to the fascia on inner margin; a slight minutely waved whitish subterminal line; a waved chocolate-brown terminal line; cilia whitish with a chocolate-brown line through them. Hind wing yellow, the costal area white to near apex; the terminal area fuscous tinged with chocolate-red, its inner edge oblique from below costa beyond middle to above vein 2, then irregular and ending on vein 1 beyond middle; the termen suffused with white intersected by wedge-shaped dark streaks above veins 3 and 2; two waved whitish subterminal lines from vein 2 to above tornus; cilia white mixed with fuscous towards tornus. Underside of fore wing white tinged with yellow in parts, the costal area red-brown except at base, the terminal area red-brown, broadly towards apex, a dark point in cell and diffused band from upper angle of cell to vein 2; hind wing with only a little whitish towards apex on the dark terminal band.

Hab. Br. New Guinea, Ekeikei (*Pratt*), 2 ♂, 4 ♀; Queensland, Kuranda (*Dodd*), 1 ♂, 1 ♀. *Exp.* 36–42 millim.

*4922. Leucogonia cebeensis. (Plate CXLVI. fig. 16.)

Zalissa kebeensis, Beth.-Baker, Nov. Zool. xiii. p. 211 (1906).

♂. Head and tegulæ pale yellow; palpi except at tips, sides of frons, antennæ and a tuft behind them and sides of tegulæ dark brown; patagia brown mixed with white, the vertex of thorax reddish yellow; pectus and legs yellowish white, the fore coxæ pure white, the fore femora and tibiæ brown; abdomen pale yellow with small dorsal brown spots on 1st three segments, the extremity of anal tuft brown. Fore wing yellow strongly tinged with pink, the costal edge pure white; a dark brown fascia on inner margin slightly irrorated with white and defined above by a silvery white streak; a broad terminal cupreous brown band, its inner edge minutely waved where it joins the fascia on inner area and with double dark brown subterminal line on it slightly angled inwards in submedian fold; a fine waved dark brown terminal line. Hind wing golden yellow with a broad reddish-brown terminal band from vein 6 to near tornus, its inner edge minutely waved and angled inwards on vein 1 halfway to base and with two oblique whitish bars on it above tornus; a terminal series of small dark brown lunules beyond the band slightly defined by yellowish suffusion on inner side; cilia white with a brown line through them, the tips with brown scales mixed on inner half; the underside with the band narrower and from below vein 6 to submedian fold.

Hab. Br. New Guinea, Mt. Kebea (*Pratt*), type † ♂ in Coll. Bethune-Baker. *Exp.* 42 millim.

Genus **METAXANTHIA**, nov.

Type, *M. cosmopis*.

Proboscis fully developed; palpi porrect to just below frons, the 2nd joint broadly scaled, the 3rd minute; frons with rounded prominence with slight vertical ridge at middle and corneous plate below it; eyes large, round; antennæ of male serrate; thorax clothed with hair and scales mixed and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and hardly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4923. Metaxanthia cosmopis.

Britha cosmopis, Lower, P. Linn. Soc. N.S.W. xxii. p. 17 (1897).

Head fuscous brown, frons pale, antennæ rufous; thorax yellow mixed with red-brown; fore legs fuscous brown; mid and hind legs mostly yellow; abdomen yellow. Fore wing red-brown turning to greyish brown towards costa, the area below submedian fold white turning to yellow then pale rufous towards inner margin; an oblique black striga from median nervure to submedian fold before middle; a fine white streak beyond the cell below vein 4 and shorter streak below vein 3 before the obliquely curved black post-medial line running from below apex to submedian fold, the area

Fig. 214.—*Metaxanthia cosmopis*, ♂. ½.

beyond it yellowish white turning to grey beyond the indistinct fine white obliquely curved subterminal line running from below apex to submedian fold; a fine black terminal line; cilia grey-brown with a dark line through them. Hind wing yellow with fuscous terminal band, broad at costa, narrowing to tornus, its inner edge slightly angled at veins 5 and 1; cilia yellowish with a dark line through them. Underside of fore wing yellow with round fuscous discoidal spot and broad terminal band.

Hab. Queensland, Thursday I., 1 ♀, Cape York, 1 ♂, 1 ♀, Cooktown, type † ♀ in Coll. Turner. *Exp.* 32 millim.

Genus APINA.

	Type.
Apina, Wlk. iii. 756 (1855)	*callisto*.
Amazela, Boisd. Rev. Zool. (3) ii. p. 66 (1874)	*callisto*.

Proboscis fully developed; palpi porrect, short, fringed with long hair; frons with long flattened corneous process and quadrate corneous plate below it; eyes small, reniform; antennæ of male bipectinate with rather long branches to apex; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen smoothly scaled and without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4924. Apina callisto.

Apina callisto, Wlk. iii. 756 (1855); Kirby, Cat. Lep. Het. p. 442.

Head and thorax black with some white hair; sides of head, tegulæ, and edges of patagia with yellowish white stripes, the last with some orange hair at extremity; fore femora fringed with yellow hair, the tibiæ and tarsi banded with white; abdomen orange with narrow black segmental bands, the 1st segment black, the ventral surface banded black and white. Fore wing red-brown

Fig. 215.—*Apina callisto*, ♂. ½.

irrorated with yellowish white and with rufous streaks in submedian fold and the interspaces beyond the cell; subbasal line represented by a yellow striga from below costa; antemedial line indistinct, yellowish, diffused, oblique, interrupted at submedian fold, a small yellow spot just beyond it in cell and an elliptical spot towards end of cell defined by black; postmedial line very indistinct, yellowish, oblique and sinuous to vein 2, then bent inwards and with oblique yellow bar before it beyond the cell and spot above vein 2, subterminal band from just below costa to submedian fold, oblique to vein 4, then erect, a series of small round yellowish spots just before termen. Hind wing black-brown with broad postmedial yellowish-white band from below costa to inner margin, its inner edge angled outwards at vein 4 and inwards at submedian fold, its outer edge minutely waved and excurved at middle; a series

yellowish spots just before termen sometimes forming a narrow patch at apex and interrupted at submedian fold. Underside of fore wing with the subterminal band broader and more evenly curved, the spots before termen wedge-shaped; hind wing with diffused curved subterminal whitish line, the apical patch diffused.

Hab. Queensland, Moreton Bay (*Capt. Parry*), 1 ♂; N. S. Wales, Sidney (*Raynor*), 2 ♂, 5 ♀; Tasmania (*Sir G. Smith, J. J. Walker*), 3 ♂ type. *Exp.* 44–62 millim.

Genus **IPANICA**, n. n.

Type.

Ipana, Jordan, Nov. Zool. iii. p. 54 (1896), nec Wlk. 1858 ..... *cornigera.*

Proboscis fully developed; palpi porrect, the 2nd joint moderately fringed with hair, the 3rd moderate; frons with long flattened corneous process and quadrate corneous plate below it; eyes large, round; antennæ of male minutely serrate and ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with vein 2 from near angle of cell; 3, 4 from angle; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4925. Ipanica cornigera.

Ægocera cornigera, Butl. Trans. Ent. Soc. 1886, p. 381; Kirby, Cat. Lep. Het. p. 37.

Head and thorax black-brown; palpi white at base and with white band at extremity of 2nd joint; head with white lateral stripes; tegulæ dorsally and at sides, patagia at middle and metathorax with white stripes; pectus orange; legs orange mixed with

Fig. 216.—*Ipanica cornigera*, ♂. ½.

brown, the tibiæ at extremities and the tarsi brown banded with white; abdomen orange with brownish segmental lines, the ventral surface banded with brown. Fore wing red-brown slightly irrorated with yellowish; some yellow at base of inner margin; two small white spots at base followed by another below costa; a narrow oblique antemedial band from costa to above vein 1 where it forks slightly, incurved below costa; four small spots above medial part of inner margin and one in submedian fold; an elliptical spot in end of cell; a postmedial band from costa to vein 2, excurved below

costa and incurved at discal fold and lower extremity where it expands, a series of small elongate spots beyond it from costa to vein 4 and a series just before termen with lunulate spot at tornus; cilia brown with series of small white spots. Hind wing orange; a small blackish discoidal spot and broad terminal band with irregular inner edge, expanding towards costa and triangularly at submedian fold; cilia chequered orange and blackish. Underside of fore wing with the base orange, the veins of terminal area of both wings streaked with white.

Hab. New Guinea (*Mathew*), 2 ♂, 4 ♀, Port Moresby, 2 ♂, 1 ♀, Sogeri, 2 ♂; Queensland, Gayndah, 1 ♂ type, Peak Downs, 1 ♀, Brisbane (*Turner*), 3 ♀, Dalby (*Turner*), 1 ♂; N. Australia, Alexandria (*Stalker*), 2 ♂, 1 ♀; W. Australia, Sherlock R. (*Clements*), 2 ♂, 2 ♀. *Exp.* 24–42 millim.

Genus **MICRAPATETIS**.

	Type.
Micrapatetis, Meyr. Trans. Ent. Soc. 1897, p. 369	*orthozona*.
Axiorata, Turner, P. Linn. Soc. N. S. W. xxvii, p. 120 (1902) ...	*leucozona*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to about vertex of head and moderately scaled, the 3rd short; frons with rounded prominence; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with large spreading crest; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from below upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle or stalked; 8 anastomosing with the cell to near middle.

A. Fore wing with the ground-colour white.
  a. Fore wing not suffused and irrorated with bronze-brown.
    a^1. Fore wing with ante- and postmedial black-brown bands ..... *tripartita*.
  b^1. Fore wing with medial bronze-brown band.
    a^2. Fore wing yellowish white, the medial and terminal bands connected in male ..... *orthozona*.
    b^2. Fore wing pure white, the medial and terminal bands separate in male ..... *leucozona*.
  b. Fore wing suffused and irrorated with bronze-brown ..... *albiviata*.
B. Fore wing ochreous suffused with purplish red.
  a. Fore wing with the medial blackish band angled outwards at middle.
    a^1. Fore wing with the medial band wide, the terminal area suffused and irrorated with fuscous ..... *glycychroa*.
  b^1. Fore wing with the medial band narrow, the terminal area very slightly irrorated with fuscous ..... *purpurascens*.
  b. Fore wing with the medial blackish band slightly excurved at middle ..... *pyrastis*.
  c. Fore wing dark red-brown with the basal area yellow ... *flavipars*.

4926. **Micrapatetis tripartita.** (Plate CXLVI. fig. 17.)

Acontia tripartita, Butl. Trans. Ent. Soc. 1886, p. 400.

♀. Head and thorax white, the frons and tegulæ tinged with yellow; palpi black, yellow at tips; sides of frons and antennæ

except basal joint black; sides of tegulæ, base of patagia, and a patch on vertex of thorax black-brown with a cupreous gloss; pectus and legs yellow, the fore tibiæ black-brown, the tarsi black-brown ringed with yellow; abdomen yellow irrorated with brown, the base white, the medial segment with dorsal black-brown bands. Fore wing white, a triangular black-brown subbasal mark on costa; antemedial line black-brown, expanding at costa and slightly angled outwards at median nervure and inwards above vein 1; a black discoidal lunule confluent with a black-brown postmedial band, its outer edge excurved below costa, at middle and at vein 1, joined below costa by an oblique black-brown patch from costa; the costa yellow towards apex; a black-brown terminal band, angled inwards in discal fold and incurved at submedian fold; cilia with yellow patches at apex, middle, and above tornus. Hind wing yellow, the terminal half suffused with fuscous brown; an indistinct dark discoidal bar; cilia yellow mixed with fuscous; the underside yellow irrorated with brown, especially on terminal area, a dark discoidal lunule and indistinct diffused curved postmedial line.

Hab. Queensland, Townsville (*Dodd*), 1 ♀, Rockhampton, 3 ♀ type. *Exp.* 18 millim.

4927. **Micrapatetis orthozona.** (Plate CXLVI. fig. 18.)

Micrapatetis orthozona, Meyr. Trans. Ent. Soc. 1897, p. 369.

♂. Head yellowish white, the palpi, sides of frons, antennæ and two tufts of hair behind them black-brown; thorax black-brown with a yellow mark at base of tegulæ; pectus yellowish white, the legs suffused with brown, the tarsi ringed with white; abdomen yellowish white dorsally suffused with brown, the anal tuft orange. Fore wing yellowish white; a cupreous brown patch at base with sinuous outer edge; a slightly curved cupreous brown medial band connected by a fascia in discal fold with the cupreous brown terminal area, narrowing to a point at tornus; cilia yellowish white mixed with brown at base. Hind wing yellowish white suffused with brown; cilia yellowish white with a brown line through them; the underside whitish irrorated with brown and with diffused medial and terminal bands.

♀. Fore wing without the brown fascia between the medial and terminal bands.

Hab. Queensland, Townsville (*Dodd*), 1 ♂. *Exp.* 16 millim. Type † in Coll. Meyrick.

4928. **Micrapatetis leucozona.** (Plate CXLVI. fig. 19.)

Axiorata leucozona, Turner, P. Linn. Soc. N.S.W. xxvii. p. 121 (1902).

Head and thorax black-brown, the vertex of head yellowish white, the tips of patagia and metathorax white; pectus, legs, and abdomen yellow irrorated with brown. Fore wing white; a bronze-brown basal patch with oblique outer edge; a broad medial

bronze-brown band, its inner edge excurved, its outer edge nearly straight; a terminal bronze-brown band, angled inwards at discal fold and narrowing to a point at tornus. Hind wing yellowish entirely suffused with fuscous brown, the cilia yellower with a brown line through them; the underside yellow thickly irrorated with brown, an indistinct diffused curved postmedial line.

Hab. Queensland (*Arnold*), 1 ♂, 3 ♀, Brisbane (*Turner*), 1 ♀. *Exp.* 16 millim. Type † in Coll. Turner.

4929. **Micrapatetis albiviata**, n. sp.

♀. Head ochreous white; palpi at sides and antennæ brown; thorax ochreous white mixed with bronze-brown; pectus and legs brown mixed with whitish; abdomen whitish tinged with brown. Fore wing ochreous white suffused and irrorated with bronze-brown, the costal area whiter to postmedial line; antemedial line white, waved, inwardly oblique, from the costal area to inner margin;

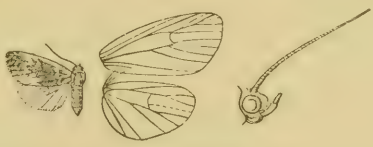


Fig. 217.—*Micrapatetis albiviata*, ♀. ' ½.

orbicular absent; reniform a minute white lunule with rufous centre; postmedial line white, inwardly oblique, dentate, excurved beyond lower angle of cell; subterminal line indistinct, white, excurved below vein 7 and at middle; cilia chequered red-brown and white. Hind wing ochreous white; the underside slightly irrorated with brown and with small blackish discoidal spot.

Hab. N. Australia (*W. Stalker*), 1 ♀ type. *Exp.* 20 millim.

*4930. **Micrapatetis glycychroa**. (Plate CXLVI. fig. 20.)

Axiorata glycychroa, Turner, Tr. R. Soc. S. Austr. xxviii. p. 218 (1904).

♀. Head and thorax reddish ochreous mixed with fuscous; palpi blackish at sides; tarsi banded with black; abdomen greyish fuscous. Fore wing ochreous suffused with purplish red; the basal area suffused and irrorated with fuscous leaving some ochreous below costa and before antemedial line; the subbasal line represented by an ill-defined fiery red and black spot below costa; antemedial line waved, black defined by fiery red on outer side; medial area suffused and irrorated with fuscous leaving an obscure ochreous discoidal lunule; postmedial line waved, black defined by fiery red on inner side, angled outwards at vein 4 and inwards in submedian fold; subterminal line represented by a series of very ill-defined spots formed by fuscous irroration; termina area fuscous

except at apex and tornus, angled inwards in discal and submedian folds; some whitish points at base of medial part of cilia. Hind wing uniform fuscous; the underside with the base of costal area tinged with ochreous and some whitish points at base of cilia.

Hab. Queensland, Thursday I., type † ♀ in Coll. Turner, Duaringa. *Exp.* 18 millim.

4931. **Micrapatetis purpurascens**, n. sp. (Plate CXLVI. fig. 21.)

Head and thorax pale purplish red slightly irrorated with fuscous; palpi and legs suffused with fuscous brown; abdomen greyish suffused with fuscous brown. Fore wing pale purplish red with an ochreous tinge; a triangular black mark on base of costa; a rather narrow medial blackish band, constricted at discal and submedian folds, its outer edge angled outwards at middle; two slight blackish spots on costa towards apex; the terminal area slightly irrorated with fuscous, a terminal series of black striæ. Hind wing fuscous brown, the cilia somewhat paler.

Hab. W. Australia, Sherlock R. (*Clements*), 1 ♂, 3 ♀ type. *Exp.* 16–18 millim.

4932. **Micrapatetis pyrastis**, n. sp. (Plate CXLVI. fig. 22.)

♀. Head and tegulæ purplish grey; thorax pale purplish red; palpi, pectus, and legs blackish mixed with grey; abdomen purplish red. Fore wing pale purplish red, the basal half with an ochreous tinge; a medial leaden grey band defined at sides by black lines, slightly constricted at discal fold and strongly at submedian fold, some slight pale points beyond it on costa; cilia whitish at base, blackish at tips. Hind wing fuscous with a purplish-grey tinge; cilia whitish with a fuscous line through them; the underside rather paler with faint diffused curved postmedial line.

Hab. Madras, Gooty (*Campbell*), 2 ♀ type. *Exp.* 18 millim.

4933. **Micrapatetis flavipars**, n. sp. (Plate CXLVI. fig. 23.)

♀. Head and tegulæ dark greyish brown; thorax ochreous yellow; pectus, legs, and abdomen greyish brown. Fore wing with the basal area ochreous yellow, defined by the fine black antemedial line, minutely waved and somewhat oblique, the base of costa with a brown fascia; the rest of wing dark red-brown with a silvery gloss; an indistinct diffused red-brown postmedial line. Hind wing reddish brown with a greyish tinge; a fine pale line at base of cilia.

Hab. Bombay, 1 ♀ type. *Exp.* 18 millim.

Genus **XENOPSEUSTIS.**

Xenopseustis, Meyr. Trans. Ent. Soc. 1897, p. 369..... Type. *pœcilastis*

Proboscis fully developed; palpi porrect, slender, extending to just beyond the frons which has a rounded prominence with corneous plate below it; eyes large, round; antennæ of male rather laminate and ciliated; thorax clothed chiefly with scales and without crests; tibiæ smoothly scaled; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 7, 8, 9 stalked, 10, 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell to near middle.

* 4934. Xenopseustis pœcilastis.

Xenopseustis pœcilastis, Meyr. Trans. Ent. Soc. 1897, p. 370.

♂. Head pale yellow faintly tinged with rufous; palpi brown; antennæ rufous with slight whitish annuli; tegulæ red-brown with pale yellow tips; thorax red-brown, the tips of patagia and paired patches on mesothorax yellowish white; pectus and legs red-brown mixed with yellowish white, the tarsi red-brown ringed with white; abdomen yellowish with red-brown bands, ventrally suffused with

Fig. 218.—*Xenopseustis pœcilastis*, ♂. $\frac{5}{2}$.

rufous. Fore wing red-brown; a yellowish-white subbasal line from costa to submedian fold, with a patch just beyond it from cell to inner margin; a yellowish-white antemedial band with irregularly sinuous edges; a yellowish-white striga from middle of costa and line from submedian fold to inner margin followed by a point on vein 1; an oblique discoidal band strongly constricted at middle and with rounded extremities, a spot beyond it on costa and oblique band from below it to tornus with traces of a sinuous line between then; an irregular subterminal maculate band from apex to termen at vein 3, its outer edge indented at vein 7 and bent inwards at discal fold; cilia yellowish white, red-brown at middle and above tornus. Hind wing red-brown, the base and inner margin pale yellow; cilia yellowish mixed with red-brown; the underside yellowish white, the costal area irrorated with red-brown, a diffused medial band from costa to submedian fold and a curved minutely waved postmedial line, a terminal series of rather wedge-shaped streaks on the veins.

Hab. Queensland, Duaringa, type † ♂ in Coll. Meyrick. *Exp.* 24 millim.

Genus AGARISTODES, nov.

Type, *A. feisthameli*.

Proboscis fully developed; palpi porrect, extending about the length of head and clothed with long hair; frons with rounded prominence with minute truncate process with raised edges at centre; eyes small, reniform; antennæ of male bipectinate with moderate branches, short towards base and apex, of female serrate; thorax clothed with rough hair only and without crests; femora fringed with long hair, the tibiæ smoothly scaled; abdomen clothed with rough hair and with hairy crest at base. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from below upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with vein 2 from near angle of cell; 3, 4 from angle; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4935. Agaristodes feisthameli.

Agarista feisthamelii, Herr.-Schäff. Aussereur. Schmett. f. 25 (1853); Kirby, Cat. Lep. Het. pp. 22, 442.

♂. Head and thorax black, the tegulæ and upper edge of patagia with slight whitish stripes; the femora fringed with orange hair, the fore and hind tibiæ at base, middle and extremity, the hind tibiæ at base, the spurs and tarsi banded with white; abdomen black, the basal crest orange, the two subterminal segments with orange bands and the anal tuft orange. Fore wing black-brown irrorated with bluish white; subbasal line bluish white, sinuous, from costa to vein 1;

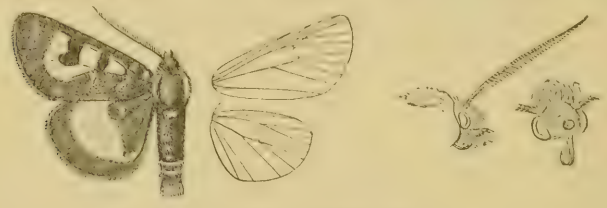


Fig. 219.—*Agaristodes feisthameli*, ♂. ½.

antemedial line bluish white, oblique, diffused, sinuous, a wedge-shaped yellowish white patch beyond it in cell and a quadrate patch towards extremity of cell; a broad curved postmedial yellowish-white band from below costa to vein 2, its inner edge expanding at discal fold, then excurved and bent inwards above vein 2 to the patch in cell, a fine sinuous bluish-white line beyond it from costa to vein 6 and a sinuous subterminal line from below costa to vein 6; a series of minute round white spots just before termen; cilia white at tips towards apex and tornus. Hind wing black-brown with large yellowish-white postmedial patch from below costa to vein 1, its inner edge slightly irregular, its outer edge strongly curved; a faint diffused whitish bar near end of cell; cilia white at tips except between veins 6 and 2; the underside with the whitish patch running inwards below costa to base, an elliptical black discoidal spot.

♀. Palpi with white bands on the joints, the stripes on tegulæ and patagia prominent; fore wing with the postmedial band not quite confluent with the patch in cell on upperside; hind wing with less white below costa, only partially defining the discoidal spot.

Hab. Tasmania (*R. Butler*), 2 ♂, 2 ♀. *Exp.* 44–52 millim.

Genus **RADINOCERA**, nov.

Type, *R. maculosa*.

Proboscis fully developed; palpi porrect to just beyond frons, the 2nd joint fringed with hair below, the 3rd moderate; frons with large truncate conical prominence with raised edges and corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed chiefly with scales and without crests; tibiæ moderately fringed with hair; abdomen smoothly scaled with basal fan-shaped crest formed of scales. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing with orange postmedial band not reaching costa ..... *diversa*.
B. Hind wing with pale yellow antemedial patch ..... *placodes*.
C. Hind wing with the basal half white.
  a. Fore wing with the outer edge of postmedial band rounded below the discal fold..... *maculosa*.
  b. Fore wing with the outer edge of postmedial band dentate below the discal fold..... *vagata*.

4936. **Radinocera diversa.** (Plate CXLVI. fig. 24.)

Agarista diversa, Wlk. xxxi. 49 (1864); Kirby, Cat. Lep. Het. p. 37.

Black-brown; head yellow, the extremity of palpi, frontal prominence, and a patch on vertex brown; tegulæ and patagia orange, the latter with black spots on shoulders; pectus pale yellow, the mid and hind tibiæ with orange patches; abdomen with orange bands, narrow towards base. Fore wing with some orange at base; an oblique orange antemedial bar from subcostal nervure to vein 1; a quadrate spot in end of cell; an elliptical spot below base of vein 2; an oblique band beyond the cell between veins 7 and 2 rounded at extremities and constricted at middle; the veins of terminal area with whitish streaks. Hind wing with broad curved orange postmedial band from vein 7 to inner margin, rounded above; cilia chequered brown and orange.

Hab. N. Australia (*J. R. Elsey*), 1 ♀ type; W. Australia, Derby (*Tunney*), 1 ♂. *Exp.* 42 millim.

*4937. **Radinocera placodes.** (Plate CXLVI. fig. 25.)

Cruria placodes, Lower, Tr. R. Soc. S. Austr. xxvii. p. 30 (1903).

♀. Black; frons with yellow band, vertex of head yellow, neck and patagia with yellow bands, thorax with some yellow hair; coxæ yellow; abdomen banded with yellow. Fore wing with yellowish-

white spot on inner margin before middle; a minute spot in end of cell; an oblique postmedial band from costa to just below vein 2, its inner edge indented beyond lower angle of cell and its outer at discal fold, its lower extremity rounded; a quadrate spot at apex and a triangular spot at tornus. Hind wing with pale yellow patch from near base to beyond the cell, not reaching costa or inner margin, its outer edge excurved beyond lower angle of cell; a small spot at apex and a semicircular spot above tornus; cilia with some white points.

Hab. Tasmania, type † ♀ in Coll. Lower. *Exp.* 46 millim.

4938. Radinocera maculosa.

Phalænoides maculosus, Roths. Nov. Zool. iii. p. 94, pl. 15. f. 29 (1896).

♂. Dark brown; palpi with the 1st and 2nd joints banded with orange, the sides of frons, back of head, and extremity of tegulæ and patagia orange; coxæ and inner side of fore tibiæ orange; abdomen banded orange and black-brown. Fore wing with antemedial white striga on vein 1; two spots on medial part of inner margin, the

Fig. 220.—*Radinocera maculosa*, ♂. ½.

basal one largest; a band beyond the cell from just below costa to submedian fold, rounded at extremities and strongly constricted at middle; a series of points beyond it; spots below apex and above tornus with traces of points between them; cilia yellowish at apex and above tornus. Hind wing with rounded white subbasal patch from below costa to near inner margin; a subterminal spot below vein 2; cilia chequered yellow and brown.

Hab. Queensland, Cedar Bay (*Meek*), type † ♂ in Coll. Rothschild, Townsville (*Dodd*), 2 ♂. *Exp.* 44 millim.

4939. Radinocera vagata.

Nyctemera vagata, Wlk. xxxi. 208 (1864); Kirby, Cat. Lep. Het. p. 422.
Phalænoides kuhni, Roths. Nov. Zool. vii. p. 275, pl. 5. f. 4 (1900).

♀. Head and thorax dark brown; palpi white at base and extremity of 2nd joint, some white round the frontal prominence and on back of head; tegulæ and patagia edged with white; pectus white with orange spots in front, legs with some white, the fore femora and tibiæ partly orange; abdomen orange, the 1st two segments banded black and white. Fore wing dark brown; some white points on basal area; small antemedial and medial spots in cell;

a patch on middle of inner margin with a spot beyond it; a post-medial band with very irregular edges from costa to below vein 2, with a series of points beyond it, a subterminal series of points, the point on vein 5 displaced inwards, spots near apex and tornus. Hind wing with the basal half white, the terminal half blackish with crenulate inner edge; cilia of both wings chequered black and white.

Hab. New Guinea, Port Moresby, 2 ♀; Dammer I (*Kühn*), type † ♂ *kuhni* in Coll. Rothschild; N. Australia (*J. R. Elsey*), 1 ♂ type. *Exp.* 44–54 millim.

Genus **IDALIMA**.

Type.

Idalima, Turner, Tr. R. Soc. S. Austr. xxvii. p. 2 (1903) ..... *affinis*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with hair in front, the 3rd moderate, porrect; frons with truncate conical process with raised edges and corneous plate below it; eyes large, round; antennæ of male ciliated; thorax clothed with hair and scales mixed and without crests; tibiæ moderately fringed with hair; abdomen smoothly scaled and without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with ante- and postmedial blue lines ..... *leonora*.
B. Fore wing without ante- and postmedial blue lines.
  a. Hind wing with the basal half suffused with greenish yellow except towards costa ..... *cyanobasis*.
  b. Hind wing with the basal half not suffused with greenish yellow.
    a^1. Hind wing with white band beyond the cell between vein 6 and submedian fold ..... *hemiphragma*.
    b^1. Hind wing with two yellowish-white sometimes conjoined spots beyond the cell ..... *metasticta*.
    c^1. Hind wing without band or spots beyond the cell ... *affinis*.

4940. Idalima leonora.

Agarista leonora, Doubl. Stokes Discov. Austr. i. p. 518, pl. 3. f. 4 (1846); Butl. Ill. Het. B. M. i. p. 8, pl. 4. f. 6; Kirby, Cat. Lep. Het. p. 23.

Black tinged with purple; palpi banded with pale yellow; sides of frons, basal joint of antennæ, spots on vertex of head, gulæ, and edges of tegulæ and patagia yellow; the hair on coxæ and femora orange; tibiæ and tarsi with white points; abdomen with segmental white lines on ventral surface and sometimes on upper-side, the terminal segment orange. Fore wing with blue spot at base; an oblique streak from base of inner margin to the oblique antemedial line; a whitish bar across end of cell with short blue streak above it and spot below it; an oblique series of three whitish spots beyond the cell, two further from base above veins 3 and 4 and a more elongate spot above vein 2; a postmedial

oblique series of small blue spots from costa to vein 2, then retracted to below end of cell and running as a line to inner margin; a curved subterminal series of blue spots; cilia white at apex and towards tornus. Hind wing with oblique series of yellowish-white spots from vein 4 beyond the cell to tornus; cilia white at apex and tornus and with white spots at middle; the underside with two blue postmedial spots below costa.

Ab. 1. Hind wing with the five spots much nearer termen.—Cedar Bay (*Meek*), in Coll. Rothschild.

Hab. N. Australia, Pt. Essington (*McGillivray*), 2 ♂, 4 ♀, Pt. Darwin (*J. J. Walker*), 2 ♂, 2 ♀; Queensland, Cedar Bay. *Exp.* 48–56 millim.

4941. Idalima cyanobasis, n. n.

Agarista novæ-hiberniæ, Butl. Ill. Het. B.M. i. p. 8, pl. 4. f. 5 (nec Boisd.).

♂. Head and thorax black; 1st and 2nd joints of palpi pale yellow with some black scales; sides of frons, vertex of head, tegulæ, patagia, and vertex of thorax striped with pale yellow; gulæ pale yellow; pectus with yellowish-white hair; legs black striped with white, mid tibiæ above except at base and extremity orange; abdomen grey above, the anal tuft orange with black dorsal spot, the ventral surface white at base, orange towards extremity. Fore wing black with greenish-yellow spots at base, two short subbasal lines below costa, a wedge-shaped patch below the cell, its extremity connected by a bar with a streak on base of inner margin, a medial band from cell to inner margin with an oblique mark beyond it from submedian fold to inner margin; purple-blue spots in middle and end of cell; a yellow band beyond the cell from costa to vein 2, oblique and sinuous to vein 5, then bent outwards and with three strong dentations on outer side, some purple-blue scales running obliquely from its lower extremity to the oblique mark on inner area; a subterminal series of small purple-blue spots on the veins, the spot on vein 5 displaced inwards; cilia white at apex and above tornus. Hind wing black, the basal half suffused with greenish yellow except on costal area; cilia chequered white and black; underside with the basal half greenish yellow extending on inner area to tornus, a black discoidal lunule, a postmedial series of purple-blue spots.

Hab. N. Australia, Pt. Essington (*McGillivray*), 1 ♂ type. *Exp.* 44 millim.

*4942. Idalima hemiphragma. (Plate CXLVI. fig. 26.)

Cruria hemiphragma, Lower, Tr. R. Soc. S. Austr. xxvii. p. 30 (1903).

♂. Dark red-brown; head and thorax with some ochreous hair; a white band behind eyes; coxæ yellow; tarsi ringed with white; abdomen with the last two segments yellow, the ventral surface banded with yellow. Fore wing with series of four small white spots below basal half of costa and above basal half of vein 1;

a small spot in middle of cell and a quadrate spot in end of it; a white postmedial band from costa to vein 2, its inner edge angled outwards below costa and beyond lower angle of cell and its lower end incurved; an indistinct subterminal series of white points; cilia white at apex. Hind wing with white band beyond the cell from vein 6 to submedian fold; cilia white towards tornus.

Hab. W. Australia, Perth, type † ♂ in Coll. Lower. *Exp.* 42 millim.

4943. Idalima metasticta, n. sp. (Plate CXLVI. fig. 27.)

Black; 1st joint of palpi and extremity of 2nd and sides of frons yellowish white; back of head, tegulæ, patagia, and thorax with pale yellow spots; gulæ and pectus yellowish white; legs black with yellowish-white bands, the mid tibiæ with orange patch above; abdomen banded with yellowish white, the anal tuft orange at extremity in female. Fore wing with two yellowish-white spots at base, subbasal spots below costa and cell followed by spots below costa and in and below cell with an elongate mark on vein 1; antemedial spots below costa and on median nervure; a small discoidal spot sometimes present; conjoined spots beyond the cell below costa and beyond upper angle with two points beyond them; a larger spot beyond lower angle and a spot on vein 1 below end of cell; a more or less developed streak on base of inner margin and sometimes a slight streak on middle of inner margin; a subterminal series of small bluish-white spots on the veins, the spot on vein 5 displaced inwards; cilia white at apex and tornus. Hind wing with yellowish-white streaks below the cell and on inner area; spots beyond the discocellulars and lower angle of cell sometimes conjoined into a sinuous band; cilia chequered black and white; the underside with streaks below base of costa and in cell, and three or four postmedial spots.

Hab. N. Australia, Adelaide R. (*J. J. Walker*), 1 ♂ type, Pt. Darwin, 2 ♀. *Exp.* 26 millim.

4944. Idalima affinis.

Agarista affinis, Boisd. Voy. Astrolabe, Lép. p. 177 (1832); Herr.-Schäff. Aussereur. Schmett. ff. 29-30; Butl. Ill. Het. B.M. i. p. 8, pl. 4. f. 3; Kirby, Cat. Lep. Het. p. 22.

Agarista vinder, Butl. A.M.N.H. (5) xiv. p. 405 (1884); Kirby, Cat. Lep. Het. p. 23.

Black; palpi at extremity of 1st and 2nd joints, sides of frons, basal joint of antennæ, gulæ and spots on back of head, tegulæ, patagia, and thorax pale yellow; mid and hind coxæ and outer side of mid tibiæ with the hair orange; fore coxæ and tibiæ with yellow hair, the tarsi ringed with white; abdomen with segmental white lines above and pale yellow bands on ventral surface, the anal tuft orange; wings tinged with cupreous brown. Fore wing with two pale yellow points at base; a subbasal series of three

points with a series of four points beyond it; an antemedial series of four points followed by a point in cell and one on each side of vein 1; an oblique postmedial band with sinuous edges from costa to submedian fold, the costal edge yellow from base to the postmedial band; a subterminal series of white points on the veins, the point on vein 5 displaced inwards; cilia yellow at apex

Fig. 221.—*Idalima affinis*, ♂. ½.

and tornus. Hind wing with the cilia pale yellow, chequered with black from apex to vein 2; the underside with purplish-blue spots beyond discocellulars and lower angle of cell and a postmedial series of five spots.

Hab. N. Australia, Pt. Macquarie (*McGillivray*), 1 ♀; Queensland (*Walker*), 1 ♂ type *vindex*; N. S. Wales, Sydney (*Damel*, *Raynor*), 2 ♂, 6 ♀. *Exp.* 36 millim.

Genus **CŒNOTOCA**.

	Type.
Cœnotoca, Turner, Tr. R. Soc. S. Austr. xxvii. p. 2 (1903)	*subaspersa*.

Proboscis fully developed; palpi obliquely upturned to just beyond frons, the 2nd joint moderately scaled, the 3rd moderate; frons with pointed conical prominence; eyes large, round; antennæ of male ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4945. Cœnotoca subaspersa.

Melanchroia subaspersa, Wlk. xxxi. p. 210 (1864); Kirby, Cat. Lep. Het. p. 397.
Cœnotoca monophyes, Turner, Tr. R. Soc. S. Austr. xxvii. p. 2 (1903).

♂. Head and thorax very dark chocolate-brown; palpi with the 2nd joint fringed with white below; frons with whitish bars above and below; some whitish hairs behind tegulæ; pectus clothed with white hair; tibiæ and tarsi ringed with white; abdomen with the crests on 2nd and 3rd segments orange at base, slight orange segmental lines, stronger at sides, and ventral white bands. Fore wing very deep chocolate-brown with oblique white band from costa beyond middle to termen just above tornus, its

outer edge slightly dentate at vein 2, then narrowing. Hind wing uniform black-brown. Underside of both wings with some white streaks at base; fore wing with the band rather broader, its inner edge somewhat incurved below costa and cell; hind wing with

Fig. 222.—*Cœnotoca subaspersa*, ♂. ½.

small white spots on lower discocellular and on termen in submedian interspace.

Hab. Queensland, Moreton Bay (*Diggle*), 1 ♂ type; N. S. Wales, Richmond R. (*Schrader*), 2 ♂. *Exp.* 34 millim.

Genus **MICROHELIA**, nov.

Type, *M. angelica*.

Proboscis fully developed; palpi porrect, the 2nd joint extending as far as frontal prominence and fringed with long hair below, the 3rd moderate; frons with truncate prominence with raised edges, small truncate process at middle and corneous plate below it; eyes small, reniform; antennæ of male ciliated; thorax clothed with rough hair only and without crests; tibiæ fringed with long hair; abdomen sparsely clothed with long hair and without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the medial band not extending below vein 1 .. *angelica*.
B. Fore wing with the medial band extending to inner margin .. *restrictalis*.

4946. **Microhelia angelica.**

Heliodes angelica, Smith, Proc. U.S. Nat. Mus. xxii. p. 484 (1900); Dyar, Cat. Lep. N. Am. p. 193.

Head and thorax black-brown with some grey hair; palpi below

Fig. 223.—*Microhelia angelica*, ♂. ¾.

and pectus with white hair mixed; abdomen black-brown with some grey hair especially in anal tuft and on vertical surface.

Fore wing black-brown with a cupreous tinge; a round yellowish-white spot beyond the cell and a bar-shaped spot from lower angle of cell to vein 1; a whitish point on costa at apex; cilia whitish at tips. Hind wing black-brown with a cupreous tinge; a round yellowish-white spot beyond the cell and a smaller spot below it in submedian fold; cilia whitish at tips. Underside of both wings slightly irrorated with grey; fore wing with the spots whiter and slightly confluent; hind wing with white streak on basal half of costa.

Hab. U.S.A., California, Los Angeles Co., Mendocino Co., Dry Creek (*Walsingham*), 1 ♂, 1 ♀. *Exp.* 14 millim.

*4947. **Microhelia restrictalis.** (Plate CXLVI. fig. 28.)

Heliodes restrictalis, Smith, Proc. U.S. Nat. Mus. xxii. p. 485 (1900); Dyar, Cat. Lep. N. Am. p. 193.

♀. Head, thorax, and abdomen black-brown mixed with some yellow; palpi yellow in front; antennæ yellow at base; head with yellow bars behind eyes; legs yellowish fringed with rufous hair. Fore wing black-brown suffused with rufous; a broad yellowish-white band from lower angle of cell to inner margin confluent with an elliptical patch beyond the cell extending to just below costa. Hind wing black-brown with a rufous gloss; a yellowish-white spot beyond the cell with a narrow band from it to vein 1. Underside of fore wing with the spot beyond the cell separate from the medial band; hind wing with the spot beyond the cell only.

Ab. 1. Hind wing immaculate.

Hab. U.S.A., California, Butte Co. (*Coquillet*), in U.S. Nat. Mus. *Exp.* 18 millim.

Genus **HELIOTHODES**, nov.

Type, *H. diminutiva*.

Proboscis fully developed; palpi porrect, the 2nd joint extending as far as the frontal prominence and fringed with long hair below, the 3rd moderate; frons with truncate prominence with raised edges and corneous plate below it; eyes small, reniform; antennæ of male ciliated; thorax clothed with long hair only and without crests; tibiæ fringed with long hair; abdomen sparsely clothed with long hair and without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing blackish suffused with purplish pink or greyish ochreous ..... *diminutiva.*
B. Fore wing ochreous white tinged with rufous ..... *fasciata.*

4948. Heliothodes diminutiva.

Heliothis diminutivus, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 148 (1873) Smith, Cat. Noct. N. Am. p. 291.

Head and thorax greyish fuscous mixed with brownish-ochreous hair; antennæ with slight whitish rings; palpi, pectus, legs, and ventral surface of abdomen mostly white, the mid tibiæ with some pink hair, the tarsi with slight brownish rings, the abdomen black-brown above with some greyish hair. Fore wing purplish pink with some black and greyish hair; the base of inner margin whitish; an ill-defined grey-white medial band from costa to vein 1 with whitish spots on it at discal and submedian folds, erect to discal fold, then oblique; an indistinct diffused greyish subterminal line; cilia brown at base, white at tips. Hind wing black-brown with a cupreous tinge; a round white spot beyond end of cell and a point in submedian fold below end of cell; cilia brown at base, white at tips. Underside of fore wing black with the inner area white, an antemedial white spot in cell, bar from lower angle of

Fig. 224.—*Heliothodes diminutiva*, ♂. $\frac{3}{2}$.

cell to vein 1, another bar beyond the cell and apical patch; hind wing with the costal edge white expanding into a spot at middle and apical patch extending to vein 5, a round spot beyond end of cell and point in submedian fold below end of cell.

Ab. 1. Fore wing with the whitish spots of medial band much larger and with a point before the reniform; hind wing with the spots larger and often confluent.

Ab. 2. Similar but fore wing black suffused with greyish ochreous and without any pink tinge.

Ab. 3. Fore wing black slightly irrorated with grey, the spot below end of cell bifid.

Hab. U.S.A., Oregon, 1 ♂, Colorado, Nevada, Verdi, 1 ♂, 1 ♀, California, 4 ♂, 7 ♀ type, Knight Valley, 1 ♂, 3 ♀, Placer Co., 1 ♂, 2 ♀, Napa Co., 1 ♂, Mendocino Co. (*Walsingham*), 12 ♂, 7 ♀. *Exp.* 20–24 millim.

4949. Heliothodes fasciata. (Plate CXLVI. fig. 29.)

Melicleptria fasciata, H. Edw. Proc. Cal. Ac. Sci. vi. p. 134 (1875): Smith, Trans. Am. Ent. Soc. x. p. 246, pl. 8. f. 63; id. Cat. Noct. N. Am. p. 291.

Head and thorax yellowish white tinged with rufous; palpi blackish at tips; abdomen blackish tinged with grey, the anal tuft

and ventral surface yellowish white. Fore wing yellowish white suffused with rufous, the base of inner margin and the termen whiter; a narrow oblique whitish band from lower angle of cell to inner margin connected with slight spots before and beyond the otherwise undefined reniform; cilia rufous at base, yellowish white at tips. Hind wing black-brown with a greyish tinge; a round white spot beyond the cell connected with a bar from lower angle of cell to vein 1; cilia red-brown at base, white at tips. Underside of fore wing black-brown, the costal area yellowish white suffused with red expanding into a spot at middle of cell, the inner area yellowish white, a medial white band from the costal fascia to vein 1, a bar beyond the cell and an apical patch; hind wing with the costal area yellowish white tinged with red except towards apex, a rounded white spot beyond the cell and a bar from lower angle of cell to vein 1.

Hab. U.S.A., Nevada, California, Placer Co., Del Norte Co., Haltville (*Walsingham*), 4 ♂, 2 ♀. *Exp.* 20 millim.

Genus EUTRICOPIS.

Type.

Eutricopis, Morr. Ann. N.Y. Lyc. xi. p. 102 (1875) ..... *nexilis.*

Proboscis fully developed; palpi porrect, the 2nd joint extending about the length of head and fringed with very long hair below, the 3rd moderate; frons smooth; eyes small, reniform; antennæ of male minutely serrate and ciliated; thorax clothed with long hair only and without crests; tibiæ fringed with long hair; abdomen sparsely clothed with long hair and without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4950. Eutricopis nexilis.

Eutricopis nexilis, Morr. Ann. N.Y. Lyc. xi. p. 102 (1875); Smith, Cat. Noct. N. Am. p. 291.
Melicleptria elaborata, H. Edw. Papilio, i. p. 21 (1881).

Head, thorax, and abdomen black with some white hairs; antennæ ringed with white; palpi, frons, pectus, legs, and ventral surface of

Fig. 225.—*Eutricopis nexilis*, ♂. ¾.

abdomen mostly white, the tarsi slightly ringed with brown. Fore wing black suffused with grey and with some purplish pink,

especially before and beyond the medial band and on termen; a medial white band from lower angle of cell to vein 1 confluent with spots before and beyond the dark reniform; cilia black, mixed with white at tips except towards apex. Hind wing black with a slight greyish tinge; confluent white spots beyond and below end of cell; cilia black at base, white at tips. Underside of fore wing with the base suffused with white, the antemedial area to submedian fold and the costal area to beyond middle crimson, the outer fork of the white band extending to costa and with a crimson patch beyond it on costal area, the apex with whitish patch and the terminal area slightly suffused with white; hind wing with the basal area white to discal fold followed by a crimson patch before the diffused white postmedial band which does not reach inner margin, the apical area white, the terminal area with crimson patch from below apex to submedian fold.

Ab. 1. *elaborata*. Fore wing without the white spot in cell before the reniform.

Hab. CANADA, Br. Columbia, Lake O'Hara (*Mrs. Nicholl*), 1 ♂, Sheep Mt. (*Mrs. Nicholl*), 1 ♀; U.S.A., Washington Forest Reserve (*Mrs. Nicholl*), 1 ♀, Colorado (*Kemp*), 1 ♀, California, Placer Co., 1 ♀. *Exp.* 22 millim.

Genus **XANTHOTHRIX.**

	Type.
Xanthothrix, H. Edw. Proc. Cal. Acad. Sci., Pac. Coast Lep. No. 29 (1878).....	*ranunculi.*
Euedwardsia, Grote, Papilio, ii. p. 122 (1882).....	*neumœgeni.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd moderate, porrect; frons with large prominence with raised edges and central corneous process hollowed out in front, a corneous plate below it; eyes small, reniform; antennæ of male simple, somewhat laminate; thorax clothed with rough hair and without crests; tibiæ fringed with long hair, the fore tibiæ with curved claw on inner side; abdomen clothed with rough hair, without crests. Fore wing with the apex rectangular, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the ante- and postmedial lines present.	
a. Fore wing dark brown mixed with yellowish and whitish	*callicore.*
b. Fore wing orange	*neumœgeni.*
B. Fore wing with the ante- and postmedial lines absent...	*ranunculi.*

4951. Xanthothrix callicore. (Plate CXLVI. fig. 30.)

Heliacea callicore, Staud. Cat. Lep. Eur. ed. ii. p. 128 (1871); id. Cat. Lep. pal. p. 220.

Head and thorax black largely mixed with grey-white; antennæ ringed with white; palpi yellow except at tips; lower part of frons yellow; pectus and legs mostly yellow; abdomen black with slight

white segmental rings, the ventral surface irrorated with yellow. Fore wing dark brown mixed with yellowish and on basal area with grey-white; subbasal line represented by a black bar from costa; antemedial line indistinct, blackish, angled inwards on vein 1; orbicular a small blackish spot confluent with the antemedial line; reniform black-brown with some yellowish in centre and some yellowish before and beyond it; postmedial line indistinct, dark, slightly excurved below costa and incurved at discal fold, incurved below vein 4; subterminal line indistinct, yellowish defined on inner side by dark suffusion, incurved in submedian interspace; cilia chequered black and white. Hind wing black-brown with large orange-yellow patch on disk from below costa to above inner margin, its upper edge angled inwards on median nervure and vein 1 and its outer incurved in submedian interspace; a large black discoidal lunule; a very ill-defined diffused subterminal yellow line, obsolete towards apex and bent outwards to termen at vein 1; cilia chequered black and yellowish. Underside orange; fore wing with blackish streak on medial part of vein 1, large black discoidal lunule and diffused curved subterminal band not reaching inner margin; hind wing with black discoidal lunule and diffused obsolescent subterminal band.

Hab. Asia Minor, Pontus, Lydia, Taurus, Amanus Mts., Eybiz, 1 ♀; Syria, 2 ♂. *Exp.* 22–24 millim.

*4952. Xanthothrix neumœgeni. (Plate CXLVI. fig. 31.)

Xanthothrix neumœgeni, H. Edw. Papilio, i. p. 101 (1881); Smith, Cat. Noct. N. Am. p. 290.

♀. Head and thorax yellow mixed with deep orange; abdomen pale yellow, dorsally suffused with fuscous brown towards base. Fore wing yellow tinged with orange, the veins, discal and submedian folds streaked with orange-red; a diffused oblique orange-red subbasal band from median nervure to inner margin; antemedial line orange-red, oblique and sinuous from costa to submedian fold where it is angled outwards to the medial line, then strongly incurved; medial line diffused, oblique from costa to lower angle of cell, angled inwards in submedian fold and outwards on vein 1; a minute dark discoidal lunule; postmedial line orange-red, oblique from costa to vein 6, incurved below vein 4 to the medial line at submedian fold and angled outwards at vein 1; an orange-red subterminal band expanding into a patch at costa, a triangular mark at discal fold and a patch from vein 2 to inner margin; an orange-red terminal line; cilia orange with series of darker spots at tips. Hind wing deep orange; some blackish suffusion at base; a black discoidal lunule; the apical area suffused with black, followed by a narrow diffused subterminal band incurved at middle; the underside uniform orange.

Hab. U.S.A., California, Los Angeles Co., in Coll. J. B. Smith. *Exp.* 28 millim.

4953. Xanthothrix ranunculi.

Xanthothrix ranunculi, H. Edw. Proc. Cal. Ac. Sci., Pac. Coast Lep. no. 29 (1878); Smith, Cat. Noct. N. Am. p. 290.

♂. Head and thorax olive-yellow with some fuscous hair on vertex of thorax; antennæ fuscous; palpi with some black hairs; abdomen olive-yellow with some fuscous towards base, the ventral surface whitish. Fore wing olive-yellow with a few fuscous scales. Hind wing olive-yellow irrorated with fuscous brown, the costal

Fig. 226.—*Xanthothrix ranunculi*, ♂. ½.

area and the termen to vein 2 suffused with brown. Underside olive-yellow; fore wing irrorated with brown except on marginal areas; hind wing with some brown irroration on basal and inner areas.

♀. Head, thorax, and fore wing much browner and less yellow.

Hab. U.S.A., California, Havilah, 3 ♂, 3 ♀. *Exp.* 22–24 millim.

Genus APAUSTIS.

	Type.
Apaustis, Hübn. Verz. p. 258 (1827)	*rupicola.*
Heliodes, Guen. Ann. Soc. Ent. Fr. x. p. 61 (1841)	*rupicola.*

Proboscis fully developed; palpi porrect, extending to just beyond frons and fringed with long hair below; frons with large round corneous prominence with raised edges and truncate process in middle, a corneous plate below it; eyes small, reniform; antennæ of male ciliated; thorax clothed with rough hair overlaying scales and without crests; tibiæ fringed with long hair, the fore tarsi with the joints very short and the ungues large; abdomen sparsely clothed with long hair but without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from below upper angle; 7 from angle; 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Fore wing with the cilia chequered black-brown and white at base, the tips white ..... *rupicola.*

B. Fore wing with the cilia black-brown at base, white at tips, with black-brown patches below middle and at tornus ..... *theophila.*

4954. Apaustis rupicola.

Noctua rupicola, Schiff. Wien. Verz. p. 90 (1776); Hübn. Beitr. i. pt. 4, p. 8, pl. 2, F (1789); Esp. Schmett. iv. pl. 192. f. 1; Dup. Lép. Fr. vii. pt. 1, p. 295, pl. 115. f. F; Frr. Beitr. iv. pl. 330. f. 1; Herr.-Schäff. Eur. Schmett., Noct. ff. 213–14; Staud. Cat. Lep. pal. p. 220.
Noctua palliata, Fabr. Mant. Ins. ii. p. 144 (1787).
Noctua pallium, Borkh. Eur. Schmett. iv. p. 92 (1792).
Noctua heliophila, Hübn. Eur. Schmett., Noct. f. 317 (1802).

Head, tegulæ, and patagia fulvous orange; thorax red-brown, with some white scales on patagia and metathorax; hinder part of pectus and mid and hind legs mostly brown, the tarsi pale yellow; abdomen brown at base, yellow at extremity. Fore wing red-brown with a cupreous gloss and some grey irroration; subbasal line represented by a brown striga from costa; antemedial line brown, erect, waved; an indistinct diffused red-brown medial shade; postmedial line brown defined by white on outer side at costa, slightly bent

Fig. 227.—*Apaustis rupicola*, ♂. ⅔.

outwards below costa, then minutely dentate, somewhat angled inwards at discal fold and incurved below vein 4, some white points beyond it on costa; subterminal line defined by a brown shade on inner side, white towards costa, excurved below vein 7 and at middle; a terminal series of dark striæ; cilia white with a series of black spots. Hind wing red-brown with a cupreous gloss; cilia white with a series of small blackish spots; the underside tinged with grey, a faint dark discoidal lunule and diffused curved postmedial and subterminal bands.

Hab. Austria; Hungary, Zeller, Frey, and Leech Colls.; Bulgaria; S. Russia, Sarepta; Asia Minor, Pontus, Taurus, 1 ♀; Kurdistan; W. Turkestan, Ala Tau. *Exp.* 20–24 millim.

4955. Apaustis theophila. (Plate CXLVI. fig. 32.)

Heliodes theophila, Staud. Stett. ent. Zeit. 1866, p. 56; id. Hor. Soc. Ent. Ross. vii. p. 131, pl. 2. f. 1; Mill. Icones, ii. p. 193, pl. 71. f. 7; Staud. Cat. Lep. pal. p. 220.

Head, tegulæ, and patagia fulvous orange; thorax brown with two white points on metathorax; pectus brown tinged with orange in front; legs brown, the tarsi ringed with yellow; abdomen dark

brown. Fore wing dark brown with a cupreous gloss and slight grey irroration; subbasal line represented by a faint dark striga from costa; traces of an erect waved dark antemedial line; reniform represented by some whitish scales on discocellulars; a faint diffused dark medial shade; postmedial line indistinct, defined on outer side by some white scales especially towards costa, slightly bent outwards below costa, then minutely waved, somewhat incurved at discal fold, incurved below vein 4 and angled outwards at vein 1, some white points beyond it on costa; subterminal line hardly traceable, with a white striga from costa: cilia brown at base, white at tips with brown patches between veins 4 and 2 and at tornus. Hind wing dark brown with a cupreous gloss; cilia brown at base, white at tips; the underside with the costal area faintly irrorated with grey.

Hab. Greece, Zeller, d'Emmick, and Leech Colls.; Asia Minor, Lydia. *Exp.* 22–24 millim.

Genus **AXENUS.**

	Type.
Axenus, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 152 (1873)	*arvalis.*

Proboscis fully developed; palpi obliquely porrect, extending to just beyond frons and fringed with long hair below; frons with truncate prominence with raised edges, its lower edge produced to a long shovel-shaped process, a corneous plate below it; eyes small, reniform; antennæ of male minutely ciliated; thorax clothed with rough hair only and without crests; tibiæ fringed with long hair; abdomen sparsely clothed with hair and without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4956. Axenus arvalis.

Axenus arvalis, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 152, pl. iv. f. 8 (1873); Smith, Cat. Noct. N. Am. p. 291.
Axenus ochraceus, H. Edw. Proc. Cal. Ac. Sci. vi. p. 136 (1875).
Axenus amplus, H. Edw. Proc. Cal. Ac. Sci. vi. p. 136 (1875).

Head, thorax, and abdomen dark olive-brown mixed with some grey; antennæ ringed with white; palpi below, pectus, legs, and abdomen mostly grey; tarsi with slight pale rings. Fore wing dark olive-brown largely suffused and irrorated with grey; a grey antemedial band, broad from costa to median nervure, then narrower, defined by the obscure brown antemedial and medial lines; a grey discoidal spot conjoined to a mark on costa; postmedial line obscure, brown, slightly excurved from costa to vein 4, then oblique; postmedial line somewhat diffused, whitish, slightly excurved from costa to vein 4, then oblique; subterminal line somewhat diffused, whitish, slightly incurved at discal and submedian

folds : a terminal series of slight dark striæ ; cilia with a dark line near base. Hind wing dark olive-brown suffused with grey especially on terminal half; rather diffused dark medial and postmedial lines ; cilia dark brown at base, grey at tips ; the underside greyer, the medial line oblique and diffused, traces of two postmedial lines.

Fig. 228.—*Axenus arvalis*, ♂. ½.

Ab. 1. *ochracea*. Head and thorax clothed chiefly with fulvous hair ; fore wing with a cupreous tinge.

Ab. 2. *ampla*. Wings with the grey markings more or less completely obsolete except the subterminal line.

Hab. U.S.A., Oregon, 2 ♀, Rouge R. (*Walsingham*), 12 ♂, 2 ♀, Grant Co. (*Walsingham*), 2 ♀, Colorado, California, 3 ♂, 9 ♀. *Exp.* 20–24 millim.

Genus **ANNAPHILA**.

Type.

Annaphila, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 149 (1873)..... *diva.*

Proboscis fully developed ; palpi porrect to just beyond frons and clothed with long hair ; frons with rounded prominence with corneous plate below it ; eyes small, elliptical ; antennæ of male ciliated ; thorax clothed with rough scales and hair and without crests ; tibiæ fringed with long hair ; abdomen without crests and with lateral fringes of hair. Fore wing short and broad, the apex rounded, the termen evenly curved and not crenulate ; veins 3 and 5 from near angle of cell ; 6 from upper angle ; 9 from 10 anastomosing with 8 to form the areole ; 11 from cell. Hind wing with veins 3, 4 from angle of cell ; 5 obsolescent from middle of discocellulars ; 6, 7 from upper angle ; 8 anastomosing with the cell near base only.

A. Hind wing orange.
  a. Hind wing with the basal and inner areas dark, without subbasal line.
    a^1. Hind wing without discoidal black spot..... *arvalis.*
    b^1. Hind wing with discoidal black spot.
      a^2. Hind wing with more or less developed postmedial line..... *danistica.*
      b^2. Hind wing without postmedial line.
        a^3. Fore wing without diffused white postmedial band.
          a^4. Fore wing without black patch between orbicular and reniform..... *mera.*
          b^4. Fore wing with black patch between orbicular and reniform.
            a^5. Fore wing on underside with three dark discal spots ..... *domina.*

b^5. Fore wing on underside with large black discal patch divided by the white reniform and a white line near its outer edge ..... *pustulata.*
b^3. Fore wing with diffused white postmedial band..... *divinula.*
b. Hind wing with more or less developed black subbasal line with more or less orange before it.
a^1. Hind wing with discoidal black spot.
a^2. Fore wing with the medial line excurved from below costa to submedian fold.
a^3. Fore wing on underside with small white spots on costa towards apex ..... *germana.*
b^3. Fore wing on underside without white spots on costa towards apex ..... *decia.*
b^2. Fore wing with the medial line slightly incurved from below costa to submedian fold ..... *depicta.*
b^1. Hind wing without discoidal black spot.
a^2. Hind wing with the terminal black band angled inwards in discal fold ..... *lithosina.*
b^2. Hind wing with the terminal black band not angled inwards in discal fold ..... *miona.*
B. Hind wing yellowish white ..... *divæ.*
C. Hind wing pure white ..... *casta.*
D. Hind wing scarlet ..... *superba.*

4957. **Annaphila arvalis.** (Plate CXLVII. fig. 1.)

Annaphila arvalis, H. Edw. Proc. Cal. Ac. Sci. vii. p. 136 (1875).
Annaphila salicis, H. Edw. Papilio, i. p. 23 (1881); Smith, Cat. Noct. N. Am. p. 297.

Head, thorax, and abdomen black-brown mixed with purplish grey; antennæ ringed with white; tarsi black ringed with white. Fore wing black-brown suffused and irrorated with purplish grey; antemedial line blackish, oblique, slightly sinuous, defined by whitish on inner side; orbicular and reniform absent; an oblique sinuous medial blackish line; an oblique diffused purplish-grey postmedial band with the indistinct postmedial line on it, bent outwards below costa, incurved at discal fold and below vein 4 and excurved to inner margin, a browner shade beyond the postmedial band bent outwards to apex; some white points on postmedial part of costa; an indistinct waved grey subterminal line bent outwards to tornus; a terminal series of black striæ; cilia brown mixed with grey. Hind wing orange, the basal area and the inner area to near tornus black-brown; a narrow black terminal band expanding at vein 2; cilia blackish at base, dull orange at tips. Underside of fore wing whitish suffused with orange on disk, the costal and inner areas irrorated with black to beyond middle; a rather diffused and oblique medial blackish band forking at costa, with a small spot beyond it on inner area; a terminal brown band suffused with whitish expanding on apical area where there is a wedge-shaped blackish mark on its inner edge with white point on costa; hind wing dull orange, the basal and inner areas suffused with brown, the costal area with some dark irroration to beyond

middle, a small discoidal spot, traces of a strongly curved postmedial line, a terminal line except towards apex expanding in submedian interspace; cilia dull orange.

Hab. U.S.A., Oregon, Grant Co., Camp Watson (*Walsingham*), 15 ♂, 4 ♀, California, Sierra Nevada. *Exp.* 28 millim.

4958. Annaphila danistica. (Plate CXLVII. fig. 2.)

Annaphila danistica, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 151, pl. iv. f. 7 (1873); Smith, Cat. Noct. N. Am. p. 297.

♂. Head, thorax, and abdomen dark brown mixed with grey; tarsi brown ringed with whitish. Fore wing dark brown suffused and irrorated with grey, the veins with slight dark streaks; subbasal line indistinct, double, waved, from costa to submedian fold; antemedial line indistinctly doubled, waved, oblique; orbicular and reniform greyish faintly defined by brown, narrow, oblique elliptical; traces of a waved medial line; postmedial line indistinct, double filled in with greyish, excurved from costa to vein 4, then sinuous; an indistinct sinuous subterminal line; a terminal brown line; cilia with dark line at base followed by a fine white line. Hind wing orange, the basal and inner areas suffused with grey-brown; an oblique black discoidal lunule; a sinuous blackish postmedial line incurved below vein 2 and obsolescent towards costa; a black terminal line; cilia grey-brown with fine whitish line at middle and whitish tips. Underside of fore wing pale yellowish irrorated with brown, the costa suffused with brown and grey to postmedial line, orbicular and reniform yellowish-white patches with elliptical black centres and black patch between them, the former quadrate, the latter elliptical, a curved brown postmedial line with pale yellow band beyond it, the terminal area brown irrorated with grey; hind wing greyish yellow irrorated with brown, a dark discoidal bar, a curved slightly waved postmedial line and a terminal line.

♀. Fore wing with the lines and stigmata clearly defined by grey; hind wing with the postmedial line much stronger and not obsolescent towards costa.

Hab. U.S.A., Oregon, Grant Co., Camp Watson (*Walsingham*), 7 ♂, 5 ♀, Nevada, 1 ♂, 2 ♀ type, California, Havilah, 1 ♂. *Exp.* ♂ 28, ♀ 22 millim.

4959. Annaphila mera. (Plate CXLVII. fig. 3.)

Annaphila mera, Harv. Bull. Buff. Soc. Nat. Sci. ii. p. 277 (1875); Smith, Cat. Noct. N. Am. p. 297.

♂. Head and thorax black-brown mixed with grey-white; tarsi black ringed with white; abdomen olive-brown, the ventral surface whitish irrorated with brown. Fore wing black-brown tinged with olive and suffused with grey; subbasal line represented by a blackish striga from costa; antemedial line blackish slightly

defined by whitish on inner side, oblique, angled outwards on subcostal nervure and in submedian fold and incurved at median nervure and below submedian fold; claviform elongate and defined by black above and at extremity, connected with postmedial line by a slight streak; orbicular and reniform with slight whitish annuli incompletely defined by black, the former oblique elliptical, open above, the latter only defined on inner side; postmedial line indistinct, diffused, whitish defined by black on inner side towards costa and below vein 2, excurved from below costa to vein 4, then incurved, some whitish points beyond it on costa; a terminal series of slight brown striæ; cilia grey-brown with a darker line near base. Hind wing orange; the basal and inner areas suffused with brown; an oblique black discoidal bar; a terminal black-brown band, its inner edge incurved at discal and submedian folds; cilia with a slight greyish line through them. Underside of fore wing orange with the costa, inner and terminal areas grey-brown, orbicular and reniform black, a slight curved black postmedial line from costa to vein 4; hind wing greyish orange irrorated with brown, a slight brown discoidal spot and terminal grey-brown band.

Hab. U.S.A., California, 1 ♂ type. *Exp.* 22 millim.

*4960. Annaphila domina. (Plate CXLVII. fig. 4.)

Annaphila domina, H. Edw. Proc. Cal. Ac. Sci. vi. p. 138 (1875); Smith, Cat. Noct. N. Am. p. 297.

♀. Head, thorax, and abdomen black, the tarsi and ventral surface of abdomen with some greenish and golden scales. Fore wing black suffused with grey; subbasal line absent; antemedial line black defined by whitish on inner side, oblique, slightly angled outwards in submedian fold; orbicular grey defined by black, oblique elliptical, open above, the reniform defined on inner side by a white bar, a black patch between them in cell; postmedial line black defined by whitish on outer side, excurved from costa to vein 5, oblique to submedian fold where it is angled inwards; then erect; hardly a trace of the subterminal line. Hind wing deep orange; the base, inner margin, and terminal band blackish, the last with sinuous inner edge; an oblique black discoidal bar. Underside of fore wing deep orange, three discal spots ringed with orange, a curved dark postmedial band, a fascia on inner margin and a black terminal band; hind wing orange with some black irroration on costal area, the basal, inner, and terminal areas black irrorated with white, discoidal bar narrow.

Hab. U.S.A., California, San Mateo Co. *Exp.* 24 millim. This species is unknown to me, figured from a drawing from type in Am. Mus. Nat. Hist.

*4961. Annaphila pustulata. (Plate CXLVII. fig. 5.)

Annaphila pustulata, H. Edw. Papilio, i. p. 23 (1881); Smith, Cat. Noct. N. Am. p. 297.

♀. Head and thorax dark reddish brown mixed with some grey; abdomen black with slight white segmental lines. Fore wing reddish brown tinged with grey; antemedial line white, oblique, sinuous; orbicular and reniform small, with whitish annuli defined by black, the former oblique elliptical, a quadrate black patch between them in the cell; postmedial line white, excurved to vein 5, then incurved; subterminal line absent. Hind wing orange-yellow, the basal, inner, and terminal areas brown, the terminal band sinuous and very narrow at middle; an oblique black discoidal bar. Underside of both wings pale orange with the margins black; fore wing with a large cuneiform black patch on disk divided by the white reniform and a white line near outer edge; hind wing with the black discoidal lunule, some scales near tornus and the termen blackish.

Hab. U.S.A., Arizona, Prescott. *Exp.* 24 millim. This species is unknown to me, figured from a drawing from type in Am. Mus. Nat. Hist.

4962. Annaphila divinula. (Plate CXLVII. fig. 6.)

Annaphila divinula, Grote, Bull. U.S. Geol. Geog. Surv. Terr. iv. p. 183 (1878); Smith, Cat. Noct. N. Am. p. 296.

♀. Head and thorax black mixed with rufous and white; tarsi rufous ringed with white; abdomen black with lateral white segmental lines, the ventral surface suffused with white. Fore wing red-brown, the inner area darker brown tinged with grey, irrorated with a few raised black scales; antemedial line indistinct, pale, oblique, waved, with a few black scales on its outer edge; reniform pure white, confluent with a white band on inner side of postmedial line, with brownish bar in centre, a small triangular brown spot beyond its upper extremity and a small round spot beyond its lower extremity; postmedial line excurved below costa and at median nervules, angled inwards at discal fold and incurved below vein 3, with a white patch beyond it from vein 3 to tornus; traces of a waved whitish subterminal line with small spot at costa; a fine white line at base of cilia. Hind wing orange; the base and inner area black-brown; an oblique black discoidal bar; a terminal black-brown band incurved at discal and submedian folds. Underside of fore wing orange with some whitish on terminal half, an oblique diffused medial brown band, an elliptical discoidal spot, an oblique band from costa before apex to termen at vein 2 and a terminal band; hind wing orange with some brown at base, an oblique antemedial black band, an elliptical discoidal spot, and a waved subterminal line, excurved to termen

at middle and with some whitish beyond it, a brown terminal line, cilia brown with whitish line at base.

Hab. U.S.A., California, 1 ♀ type. *Exp.* 20 millim.

4963. Annaphila germana. (Plate CXLVII. fig. 7.)

Annaphila germana, H. Edw. Proc. Cal. Ac. Sci. vi. p. 138 (1875); Smith, Cat. Noct. N. Am. p. 296.

♂. Head, thorax, and abdomen dark brown mixed with grey-white; antennæ ringed with white; tarsi brown ringed with white. Fore wing brown tinged with grey and in parts with rufous; the basal area with a few greenish-black scales; subbasal line represented by a greenish-black striga from costa; antemedial line greenish black, oblique, sinuous; reniform an oblique lunule defined by white; the postmedial area obliquely suffused with white, the postmedial line indistinctly double, slightly bent outwards below costa, incurved at discal fold and approximated to reniform, oblique from vein 4 to submedian fold, then excurved, some white points beyond it on costa; an oblique greenish-black fascia from apex; subterminal line whitish slightly defined by black on inner side, angled inwards at discal and submedian folds and excurved at middle; a series of black striæ just before termen; a fine blackish terminal line slightly defined by whitish on inner side; cilia blackish with fine white line at base and whitish tips. Hind wing orange, the base and inner margin black-brown, the latter interrupted by an orange striga towards tornus; an antemedial oblique waved black line; a black discoidal lunule; a terminal black band, its inner edge slightly angled inwards at discal fold and excurved at median nervules and below submedian fold; cilia black chequered with white from below apex to vein 2. Underside of fore wing orange, the costa brown except towards base, an oblique slightly sinuous brown median band, a narrow discoidal lunule, a white postmedial spot on costa with some points beyond it, a brown terminal band with sinuous inner edge expanding towards apex and with white subterminal spot on costa and yellowish spots below it and above tornus, cilia intersected with white except at base; hind wing orange with some blackish at base, an oblique waved antemedial black band, a black discoidal lunule, a brown line from middle of costa, strongly bent outwards from below costa to beyond upper angle of cell, incurved at discal fold, then excurved to vein 3 where it terminates, a terminal brown band expanding on costa to near middle, its inner edge angled inwards at discal fold and excurved at middle and below submedian fold, with a series of diffused yellowish marks on it before termen, cilia reddish brown intersected with white except at base from below apex to vein 2.

Hab. U.S.A., California, Havilah, 1 ♂. *Exp.* 22 millim.

4964. Annaphila decia. (Plate CXLVII. fig. 8.)

Annaphila decia, Grote, Can. Ent. vii. p. 47 (1875); Smith, Cat. Noct. N. Am. p. 296.
Annaphila amicula, H. Edw. Proc. Cal. Ac. Sci. vi. p. 137 (1875).

Head, thorax, and abdomen black-brown mixed with some grey; tarsi with pale rings. Fore wing reddish brown suffused and irrorated with grey; subbasal line represented by a blackish striga from costa; antemedial line blackish, oblique, dentate; orbicular and reniform with faint whitish annuli defined by a few black scales, the former round, the latter narrow; medial line strong, black, oblique, sinuous; postmedial line very indistinct, whitish, defined on inner side by a few black scales especially on inner area, slightly bent outwards below costa, incurved at discal fold and below vein 4 and bent outwards above inner margin; subterminal line very indistinct, whitish slightly defined by brown on inner side and with some black before it between veins 7 and 5, excurved below vein 7 and at middle; a terminal series of blackish striæ; cilia chequered grey and brown and with a black line through them. Hind wing orange, the base and inner area suffused with brown; an obliquely excurved black antemedial band; a black discoidal lunule; a blackish terminal band, its inner edge angled inwards in discal fold and incurved below vein 2; cilia blackish at base, whitish at tips. Underside of fore wing orange, the costa blackish and grey, an oblique black medial band, a small black spot in middle of cell and elliptical discoidal spot, a terminal blackish band expanding on apical area and not quite reaching tornus, with some whitish marks on costa and a subterminal series; hind wing orange with some brown irroration at base and on costa, an oblique sinuous black antemedial band, oblique discoidal bar, diffused postmedial marks in discal and submedian folds, and terminal band with some whitish subterminal marks on it.

Hab. U.S.A., Oregon, Grant Co., Camp Watson (*Walsingham*), 2 ♀, California, Havilah, 2 ♂, 1 ♀ type. *Exp.* 20–22 millim.

4965. Annaphila depicta. (Plate CXLVII. fig. 9.)

Annaphila depicta, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 150, pl. iv. f. 13 (1873); Smith, Cat. Noct. N. Am. p. 296.

Head, thorax, and abdomen brown mixed with purplish grey; antennæ ringed with white; white bars behind the eyes; pectus and legs mostly white, the tarsi black ringed with white. Fore wing reddish brown suffused and irrorated with purplish grey, the disk with some rufous suffusion; traces of an oblique waved antemedial line; orbicular absent; reniform fuscous slightly defined by grey, constricted at middle; an oblique slightly incurved medial black line; postmedial line dark, slightly defined by grey on inner

side, excurved below costa and at middle, angled inwards at discal fold and incurved below vein 4, some whitish points beyond it on costa; a blackish apical patch interrupted by a white striga forming part of the subterminal line, which is grey slightly defined by brown on inner side and minutely waved, a dark mark beyond it at vein 2; a fine black terminal line; cilia with black line at middle followed by a fine white line, the tips chequered fuscous and whitish. Hind wing orange, the base suffused with brown; an oblique black antemedial line bent inwards to inner margin; an oblique discoidal lunule; a black bar on inner margin above tornus; a narrow black terminal band expanding into patches at veins 2 and 1; cilia black at base, orange at tips. Underside of fore wing orange, the costa whitish irrorated with black, an oblique incurved antemedial line, a black discoidal spot constricted at middle and with dark mark above it on costa, a black terminal band expanding on apical area and not reaching tornus, with a diffused white subterminal line on it tinged with yellow except towards costa where it expands into a patch; hind wing orange, an oblique sinuous antemedial black line bent inwards to inner margin, a black discoidal lunule, a postmedial black spot on costa and striga in submedian interspace, a black terminal line expanding into patches at discal and submedian folds with some points between them; cilia orange with white line at base followed by a black line.

Hab. California, Sonome Co., 1 ♂, 1 ♀ type, Havilah, 1 ♀, Marni Co., 1 ♂, 1 ♀. *Exp.* 26 millim.

4966. **Annaphila lithosina.** (Plate CXLVII. fig. 10.)

Annaphila lithosina, H. Edw. Proc. Cal. Ac. Sci. vi. p. 137 (1875); Smith, Cat. Noct. N. Am. p. 297.
Annaphila variegata, Smith, Ann. N.Y. Ac. Sci. xviii. p. 122 (1908).

Head and thorax black mixed with some rufous and whitish; antennæ ringed with white; palpi at base, pectus and greater part of legs white, the tarsi blackish ringed with white; abdomen black with white segmental lines, the extremity and ventral surface whitish and with some orange at sides. Fore wing brown glossed with cupreous and irrorated with black, the basal area tinged with greyish and the medial area with some silvery-blue suffusion on median nervure and vein 1; a strong curved black subbasal line from costa to submedian fold; antemedial line double, blackish filled in with whitish, excurved below costa, then oblique to submedian fold where it is strongly angled outwards, angled inwards on vein 1; claviform represented by a small black mark; orbicular slightly defined by black, small, round; reniform a very large white lunule connected with costa by a white patch and defined by black on inner side and below; an indistinct medial black line oblique from costa to below cell; the postmedial area with a diffused oblique creamy-white band expanding into a large patch below vein 3, extending to the terminal line, its inner edge with a pale

lunule defined by blackish at lower extremity of reniform, then dentate at vein 2 and excurved at inner margin; postmedial line on the pale band, red-brown, oblique and sinuous to vein 4, then erect; subterminal line with white point on costa, then defined by blackish suffusion on inner side and sinuous to vein 4 where it terminates; an indistinct blackish terminal line; cilia blackish mixed with cupreous. Hind wing orange; the basal area with black streaks on median nervure and in submedian fold and on vein 1 to postmedial line; a rather diffused oblique black antemedial line; traces of an oblique postmedial line between veins 2 and 1, then bent inwards and forming a spot near inner margin; a black terminal band expanding widely on apical area, its inner edge angled inwards at vein 6, then sinuous; cilia chequered with white at tips. Underside of fore wing orange, an oblique black medial band expanding at costa and below the cell, the terminal area black expanding towards costa and with irregular white subterminal band on it tinged with orange from costa to vein 5 and vein 4 to tornus; hind wing orange with waved antemedial black band interrupted at discal fold, postmedial spots on costa, in submedian fold, and on vein 1, a terminal black band expanding at costa, discal and submedian folds, and with subterminal series of orange spots on it.

Hab. U.S.A., Oregon, Grant Co., Camp Watson (*Walsingham*), 1 ♀, California, Havilah, 1 ♂, Placer Co., 1 ♂, 1 ♀. *Exp.* ♂ 26, ♀ 30 millim.

4967. Annaphila miona. (Plate CXLVII. fig. 11.)

Annaphila miona, Smith, Ann. N.Y. Ac. Sci. xviii. p. 121 (1908).

♀. Head and thorax deep red-brown mixed with some black and metallic blue-white scales; palpi at base, pectus, and legs pure white, the tibiæ fringed with yellow hair, the tarsi black, above ringed with white; abdomen orange with diffused black dorsal fascia except on terminal segment, the ventral surface white. Fore wing purple-brown mixed with black and metallic-blue scales; subbasal line black, waved, from costa to vein 1; antemedial line sinuous, oblique from costa to submedian fold, then inwardly oblique; claviform and orbicular absent; reniform creamy white with rufous centre; medial line diffused, blackish, oblique; postmedial line slight, defined on inner side by a creamy-white band and by an olive-brown band on outer, oblique from costa to vein 4 and slightly angled inwards at discal fold, then slightly incurved; subterminal line slight, blue-white and dentate from costa to vein 3, then obsolete and with oblique creamy-white stigma at tornus; the terminal area black-brown with a cupreous gloss from apex to vein 3; cilia with a fine pale line at base. Hind wing deep orange; some slight black streaks at base and a slight oblique black antemedial line; a moderately broad black terminal band with a cupreous gloss and almost evenly curved inner edge. Underside of

fore wing orange, the costal edge black, a broad very irregular oblique black medial band, a discoidal stigma and patch beyond lower angle of cell, the terminal area black, very broad at costa, with subterminal series of slight yellow streaks on it and white spot on costa; hind wing with the antemedial line obsolete at costa, the terminal band with slight white spots on it below costa and between veins 6 and 2.

Hab. U.S.A., California, Plumas Co., 1 ♀ cotype. *Exp.* 24 millim.

4968. **Annaphila diva.**

Annaphila diva, Grote, Bull. Buff. Soc. Nat. Sci. i. p. 150, pl. 4. f. 14 (1873); Smith, Cat. Noct. N. Am. p. 296.

Head and thorax black-brown mixed with white scales; antennæ ringed with white; pectus and legs mostly white, the tarsi blackish ringed with white; abdomen black mixed with white towards extremity and with white segmental rings. Fore wing dark brown mixed with some grey; subbasal line represented by double black striæ from costa; antemedial line sinuous and somewhat oblique; orbicular small, round, incompletely defined by black; reniform

Fig. 229.—*Annaphila diva*, ♂. ½.

white with grey lunule in centre, connected with costa and inner margin by an oblique white band, its inner edge indented at submedian fold; a somewhat diffused sinuous dark oblique medial line; postmedial line white with some dark scales on its outer edge, slightly bent outwards below costa and incurved at discal fold, incurved below vein 4 and confluent with the medial band, some white points beyond it on costa; subterminal line represented by a blackish spot below vein 7 and a white spot in submedian interspace; a terminal series of faint dark lunules; cilia with a slight dark line through them. Hind wing yellowish white, the base brown followed by an oblique brown subbasal line; a narrow black-brown terminal band, expanding somewhat on apical area and below vein 2 and ending in a point at tornus; cilia black mixed with some white and with white tips, wholly black at apex and white at tornus. Underside of fore wing yellowish white with some black irroration on costa, an oblique black medial band forking towards costa and below the cell, a black discoidal lunule and some postmedial marks on the veins, terminal area black with some white points on costa and subterminal series of spots; hind wing yellowish white with oblique

dark antemedial line bent inwards to costa, discoidal point, subterminal spot on costa, and bars between veins 7 and 5 and 2 and 1 and a terminal line.

Ab. 1. Hind wing with the terminal band broader, the underside of fore wing with the black extending to the medial line, leaving an elliptical patch round the discoidal lunule connected with the postmedial line.—Yosemite Valley.

Hab. U.S.A., California, 1 ♂ type, Sonoma Co. (*Walsingham*), 2 ♀, Mendocino Co. (*Walsingham*), 1 ♀, S. Raphael (*O. Sachen*), 3 ♀, Middle California, 2 ♂, 2 ♀, Yosemite Valley, 1 ♀. *Exp.* 22–24 millim.

4969. **Annaphila casta.** (Plate CXLVII. fig. 12.)

Annaphila casta, H. Edw. Ent. Am. vi. p. 114 (1890); Smith, Cat. Noct. N. Am. p. 296.

♀. Head and thorax black-brown mixed with some white scales; antennæ ringed with white; pectus and legs mostly white; abdomen black mixed with white towards extremity and with white segmental lines, the ventral surface white. Fore wing black-brown mixed with some grey; subbasal line double, waved, from costa to submedian fold; antemedial line indistinct, curved, waved, with some whitish suffusion on inner side; orbicular small, round, with whitish centre indistinctly defined by black; a broad oblique white postmedial band, its inner edge indented below the cell, its outer waved and ending at tornus, the reniform represented by a slight grey lunule with small blackish spot beyond its upper extremity and larger spot beyond its lower; postmedial line on the white band, dark, oblique, waved to vein 3, then obsolescent and diffused; subterminal line irregularly waved, indistinct, whitish and defined by a brown band on inner side from costa to vein 3, then white; a terminal series of small blackish spots; cilia chequered pale and dark brown and with dark line through them. Hind wing pure white, the base suffused with fuscous; a black terminal band expanding on apical area and below vein 2 and ending in a point at tornus; cilia white, black at apex. Underside of fore wing white with black medial band expanding below the cell, a black discoidal lunule and postmedial spot below vein 2, terminal area black, expanding towards apex, with some white points on costa and subterminal series of spots; hind wing white with curved black antemedial line, discoidal point with striga above it from costa, subterminal series of irregular marks, and terminal line.

Hab. U.S.A., California, Mendocino Co., Rancheni Creek (*Walsingham*), 8 ♀ type. *Exp.* 26–30 millim.

4970. **Annaphila superba.** (Plate CXLVII. fig. 13.)

Annaphila superba, H. Edw. Proc. Cal. Ac. Sci. vi. p. 139 (1875); Grote, Ill. Essay, p. 60, pl. 3. f. 28; Smith, Cat. Noct. N. Am. p. 296.

♀. Head and thorax black-brown with a few greyish scales;

antennæ and tarsi ringed with white; abdomen black-brown. Fore wing dark brown tinged with red and mixed with some grey, especially on terminal area; an indistinct waved antemedial line; orbicular round, defined by a few black scales; reniform grey defined by white, oblique, connected with costa and inner margin by white lines; an indistinct waved medial line; postmedial line dark defined by whitish suffusion on outer side, oblique and slightly waved from costa to vein 4, then incurved; a blackish apical patch; the subterminal line waved, with white striga from costa, then diffused whitish, defined on inner side by red-brown to vein 4, then white; a series of black points and striæ just before termen; a black terminal line; cilia fuscous brown. Hind wing black-brown with large round crimson patch on disk from below costa to above tornus; a small discoidal brown spot; cilia whitish at tips. Underside of fore wing black with large crimson patch in, below, and beyond cell to the curved whitish postmedial line, crossed by a black medial band and with the black discoidal bar on it, subterminal line white, diffused on outer side, angled inwards below costa, then excurved: hind wing with the upper edge of crimson patch indented by a wedge-shaped mark touching the discoidal spot, a slight white subterminal line between veins 7 and 2.

Hab. U.S.A., California, Sonoma Co., 1 ♀, S. Raphael (*O. Sachen*), 1 ♀. *Exp.* 22 millim.

Genus **JANTHINEA**.

	Type.
Janthinea, Guen. Noct. ii. p. 188 (1852)	*frivaldszci.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd moderate; frons with trilobate corneous process from middle and corneous plate below it; eyes small, reniform; antennæ of male almost simple; thorax clothed with rough hair only and without crests; tibiæ fringed with long hair, the fore tarsi with the joints short and the claws large; abdomen clothed with rough hair and without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6, 7 from upper angle; 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing yellow with black terminal band ..... *divalis.*
B. Hind wing black with white medial band.
  a. Fore wing purple with white medial band ..... *frivaldszci.*
  b. Fore wing suffused with olive and without medial band ... *dos.*

4971. **Janthinea divalis.** (Plate CXLVII. fig. 14.)

Janthinea divalis, Staud. Iris, iv. p. 312, pl. 4. f. 6 (1891); id. Cat. Lept. pal. p. 221.

♀. Head, tegulæ, and patagia opalescent blue and white, the patagia with some purplish pink on outer edge; palpi white slightly tinged with pink; thorax with some white and pink hair; pectus

and legs clothed with white and pink hair; abdomen black, the anal tuft and ventral surface with white and pink hair. Fore wing dark brown mostly suffused with purplish pink, the medial and terminal areas with opalescent blue; an indistinct inwardly oblique cupreous red antemedial band connected by a streak with the cupreous red medial band which arises from the dark discoidal lunule and is excurved below vein 2; a white postmedial band from below costa to vein 1 where it narrows to a point; cilia dark brown at base, mixed with whitish at tips. Hind wing orange-yellow, paler on costal area before the black-brown terminal band which narrows to a point at tornus; cilia purplish pink and white mixed. Underside of fore wing dark brown, the costal and terminal areas tinged with pink; hind wing orange with the basal half of costal area pink, the terminal area white, narrowing to a point at tornus and tinged with pink except towards costa.

Hab. KURDISTAN, Malatia, 1 ♀. *Exp.* 26 millim.

4972. Janthinea frivaldszci.

Heliothis frivaldszkii, Dup. Ann. Soc. Ent. Fr. 1835, p. 633, pl. 18 *b*. ff. 2, 3; Friv. Magyar Tud. Tarsag. Evkönyv. iii. p. 173, pl. 7. f. 3 (1838); Dup. Lép. Fr. Suppl. iii. p. 432, pl. 38. f. 3; Herr.-Schäff. Eur. Schmett., Noct. ff. 215–16; Staud. Cat. Lep. pal. p. 221.
Heliothis viola, Frr. Neue Beitr. iii. 16. pl. 201. f. 4 (1836).

Head and thorax purplish pink with opalescent blue streaks on upper edge of patagia and vertex of thorax; palpi above and lower part of frons whitish; eyes ringed with white; antennæ blackish; pectus and legs bluish white, the tibiæ with some pink hair, the tarsi with brownish rings; abdomen black with some pink hair, the

Fig. 230.—*Janthinea frivaldszci*, ♂. ½.

ventral surface white. Fore wing purplish pink suffused with opalescent blue especially on costal area before the antemedial line, on basal half of medial area, and on terminal area; antemedial line pink, rather diffused and nearly straight and erect; an oblique yellowish white postmedial band slightly angled inwards at lower angle of cell; traces of a diffused pink subterminal line, excurved below vein 7 and at middle; cilia pink at base, greyish at tips. Hind wing black-brown with yellowish white medial band narrowing somewhat to inner margin and with slight brown discoidal lunule on it; cilia black-brown at base, white at tips. Underside of fore wing black-brown, the costa whitish at base, then pink, expanding into a patch at apex, a broad white postmedial band angled inwards

to lower angle of cell; hind wing with pink patch on costal area before the broad white medial band with dark striga on it at upper angle of cell, the terminal area pink from apex to vein 2.

Hab. Armenia; Asia Minor, 2 ♂, 5 ♀, Pontus, 1 ♂, 1 ♀, Bithynia; ? W. Turkestan, Turcomania. *Exp.* 24 millim.

*4973. Janthinea dos.

Heliothis dos, Frr. Neue Beitr. iii. p. 98, pl. 263. f. 4 (1838); Herr.-Schäff. Eur. Schmett., Noct. ff. 274, 275; Staud. Cat. Lep. pal. p. 221.

Head and thorax brown tinged with green; abdomen black with slight whitish segmental lines and lateral fringes of ochreous hair. Fore wing brown tinged with green on basal half and olive on terminal half; a dark terminal line; cilia white. Hind wing black, the inner area with some greenish hair; a medial white band from below costa to vein 1, rounded above and narrowing below; cilia white. Underside of fore wing with white medial band not reaching costa; hind wing with the apical area olive.

Hab. Asia Minor, Pontus, Lydia. *Exp.* 22 millim. This species is unknown to me.

Genus **STEMMAPHORA**.

	Type.
Stemmaphora, Staud. Stett. ent. Zeit. 1888, p. 43	*viola*.

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd small; frons with long trilobate corneous process from middle and corneous plate below it; eyes small, reniform; antennæ of male almost simple; thorax clothed with rough hair only and without crests; tibiæ fringed with long hair; abdomen clothed with rough hair and without crests. Fore wing with the apex somewhat produced, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4974. Stemmaphora viola.

Stemmaphora viola, Staud. Stett. ent. Zeit. 1888, p. 43; Christ. Rom. Mém. v. p. 38, pl. 2. f. 8; Staud. Cat. Lep. pal. p. 220.

Head, thorax, and abdomen reddish brown mixed with grey-white; antennæ white towards base, blackish towards tips; palpi white except at base; pectus and legs mostly white, the mid and hind tibiæ with some pink hair, the tarsi blackish ringed with white. Fore wing rufous mostly suffused with purplish white and irrorated with some black scales; an oblique diffused rufous band from middle of costa to inner margin near tornus, angled inwards below the cell to near base, with an olive-yellow streak before it in cell and its outer edge indented by an olive-yellow patch in submedian interspace; an oblique rufous fascia from apex to vein 5

defined by olive-yellow on outer side; a rufous terminal line diffused inwardly at middle; cilia rufous at base whitish at tips, with a dark line through them. Hind wing dark brown with a cupreous tinge; the basal area greyish; a diffused crimson patch below end of cell; an indistinct dark discoidal spot; cilia white, tinged with

Fig. 231.—*Stemmaphora viola*, ♂. ⅔.

crimson at base. Underside of fore wing white suffused with crimson except on inner area, a blackish discoidal lunule and large patch on terminal area from vein 6 to tornus, with whitish spot above tornus; hind wing crimson with some blackish irroration at base, small discoidal lunule and diffused patch on terminal area from vein 4 to tornus.

Hab. W. Turkestan, Turcomania, 1 ♂, 1 ♀, Sarawschan, Issyk-kul. *Exp.* 22 millim.

Genus **MICRIANTHA**, nov.

Type, *M. decorata.*

Proboscis fully developed; palpi upturned. the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd moderate; frons with large rounded prominence with raised edges, corneous process in centre, and corneous plate below it; eyes small, reniform; antennæ of male almost simple; thorax clothed with rough hair and without crests; tibiæ fringed with long hair, the fore tarsi with the joints short and the ungues large; abdomen clothed with rough hair and without crests. Fore wing with the costa slightly excised beyond middle, the apex produced and acute, the termen obliquely curved and not crenulate; veins 3 and 5 from near angle of cell; 6, 7 from upper angle; 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4975. Micriantha decorata.

Heliothis decorata, Friv. Magyar Termé. Evkön, i. p. 186, pl. 3. f. 2 (1845); Staud. Cat. Lep. pal. p. 221.

Anthœcia violacea, Herr.-Schäff. Eur. Schmett. ii. p. 364 (1847), Noct. ii. 276–7; Mill. Icones, iii. pl. 113. f. 15.

♂. Head and thorax black clothed with brown and white hair; tarsi ringed with white; abdomen black, the anal tuft white, the ventral surface clothed with pink hair. Fore wing black-brown suffused with white and purplish pink; an oblique diffused whitish antemedial band connected by a fascia on median nervure with the oblique diffused postmedial whitish band; an ill-defined rounded discoidal pink patch. Hind wing orange-yellow, the basal inner

area black; a black-brown terminal band, its inner edge excurved at middle; cilia brown, white at tips. Underside of fore wing black-brown with the medial area whitish enclosing a black discoidal spot, the costal and terminal areas towards apex pink leaving

Fig. 232.—*Micriantha decorata*, ♂. ½.

some brown on costa; hind wing yellow, the base black, the costal area pink except at base, the terminal area pink with black patch at tornus extending on its inner edge to vein 4.

Hab. Asia Minor, Pontus, Bithynia, Lydia, Taurus. *Exp.* 20 millim.

Genus **PANEMERIA**.

	Type.
Panemeria, Hübn. Verz. p. 262 (1827)	*tenebrata*.
Heliaca, Herr.-Schäff. Schmett. Eur. ii. p. 370 (1852)	*tenebrata*.

Proboscis fully developed; palpi porrect, extending to just beyond frons and fringed with long hair below; frons rounded; eyes small, reniform; antennæ ciliated; thorax clothed with rough hair and without crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form a minute areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing with the medial band deep orange and very broad ..... *jocosa*.
B. Hind wing with the medial band yellow and much narrower... *tenebrata*.

4976. Panemeria jocosa. (Plate CXLVII. fig. 15.)

Anarta jocosa, Zell. Isis, 1847, p. 450; Staud. Cat. Lep. pal. p. 220.
Heliodes arbutoides, Bell. Ann. Soc. Ent. Fr. 1860, p. 694.

♂. Head and thorax black mixed with yellow hair; antennæ and tarsi ringed with yellow; abdomen black irrorated with yellow and with yellow segmental rings. Fore wing whitish mixed with red-brown, the inner area rather darker, the terminal area red-brown, narrowing to a point at tornus and slightly irrorated with white towards apex; a curved red-brown antemedial line; a diffused medial red-brown band curved inwards to costa; postmedial line red-brown, excurved to vein 4, then incurved, a pale striga beyond it from costa; subterminal line yellow-brown defined by red-brown on inner side, excurved below vein 7 and at middle;

cilia blackish brown with yellow patches below apex and middle. Hind wing orange-yellow, the base and inner margin brown; a rather broad black terminal band with slightly waved inner edge; cilia black at base, yellow at tips. Underside of fore wing orange, the costal area, the area from cell to submedian fold, the lower end of cell, a discoidal bar and the terminal area to submedian fold suffused with black; hind wing irrorated with a few black scales, a small discoidal spot and the terminal area tinged with blackish.

Hab. Sicily, 1 ♂ type; Balkan States. *Exp.* 24 millim.

4977. Panemeria tenebrata.

Phalæna tenebrata, Scop. Ent. Carn. p. 230 (1763); Staud. Cat. Lep. pal. p. 220.
Noctua arbuti, Fabr. Syst. Ent. p. 619 (1775); Don. Brit. Ins. x. p. 47, pl. 343. f. 3.
Noctua heliaca, Schiff. Wien. Verz. p. 94 (1776); Hübn. Eur. Schmett., Noct. f. 316; Dup. Lép. Fr. vii. pt. i. p. 293, pl. 118. f. 4; Frr. Beitr. pl. 119.
Noctua domestica, Kuhn, Naturf. iii. pl. 1. f. 8 (1774) & ix. p. 136 (1776).
Noctua policula, Lang, Verz. Schmett. p. 159 (1789).
Noctua fasciola, Esp. Schmett. iv. pl. 163. f. 1 (1791).

Head, thorax, and abdomen black-brown mixed with some grey; antennæ ringed with white; palpi, lower part of frons, pectus and legs mostly yellowish, the tarsi yellowish ringed with brown; ventral surface of abdomen yellowish. Fore wing cupreous brown suffused with greyish; an indistinct curved brown antemedial line; a strong blackish medial line angled outwards below costa, on median nervure and vein 1, and inwards in cell and submedian fold; reniform represented by a faint whitish lunule; postmedial line indistinct, brown defined by whitish on outer side, oblique from costa to vein 6, slightly angled inwards at discal fold and incurved

Fig. 233.—*Panemeria tenebrata*, ♂. ¾.

below vein 4, some white points beyond it on costa; subterminal line indistinct, whitish, excurved below vein 7 and at middle; a slight blackish terminal line; cilia dark brown at base, white at tips, with brown marks at apex, middle and tornus. Hind wing black-brown with a cupreous tinge; a yellow medial band from below costa where it is broad, narrowing to vein 1, its edges somewhat irregular; cilia brown at base, white at tips. Underside of fore wing brown with white suffusion on costal area to middle, on inner and terminal areas, a yellowish white postmedial curved

sinuous band from costa to submedian fold, some white marks on costa towards apex; hind wing brown suffused with white, the yellow patch pale and diffused, extending to costa.

Hab. Britain, Leech Coll.; France, Leech Coll.; Germany, Zeller and Leech Colls.; Austria; Hungary; Switzerland, Frey Coll.; N. Spain; Italy; Greece; Turkey; Balkan States; Scandinavia; Russia. *Exp.* 20–22 millim.

Larva. Meyr. Brit. Lep. p. 167; Barrett, Lep. Brit. vi. p. 169, pl. 246. f. 1.

Pale green, dorsal line dark green; subdorsal line whitish with dark edges; spiracular line yellowish white edged above with dark green; head pale green. Food-plant, seed-capsules and flowers of *Cerastium*. 6–7.

Genus **PSEUDACONTIA**.

	Type.
Pseudacontia, Smith, Trans. Am. Ent. Soc. x. p. 246 (1882)	*crustaria*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and moderately scaled, the 3rd short; frons smooth with corneous plate below it; eyes large, round; antennæ of male somewhat laminate and almost simple; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with spreading crest; tibiæ moderately fringed with hair, the fore tibiæ short with long curved claw on inner side and short claw on outer; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and slightly crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

A. Hind wing with broad yellowish white medial band with large black discoidal lunule on it ..... *louisa*.
B. Hind wing with narrow obsolescent whitish medial band.
  a. Fore wing with white antemedial band.
    a^1. Fore with the scaling rough, the colours strongly contrasting ..... *crustaria*.
    b^1. Fore wing with the scaling smooth, the colours more diffused ..... *cansa*.
  b. Fore wing without white antemedial band..... *aterrima*.
C. Hind wing wholly black ..... *groteana*.

*4978. **Pseudacontia louisa**. (Plate CXLVIII. fig. 27.)

Pseudacontia louisa, Smith, Ann. N.Y. Ac. Sci. xviii. p. 120 (1908).

♂. Head and thorax yellow-brown mixed with creamy white and black scales; abdomen yellowish. Fore wing yellowish white mottled and marked with brown and black; basal area almost entirely irrorated with black; subbasal line double, blackish filled in with white; a broad yellowish white antemedial band defined on outer side by black scales, irregular, excurved in submedian interspace and angled inwards on vein 1; medial area irrorated with brown; orbicular large, round, black defined by yellow; reniform small, black, lunulate, placed on the black line defining the outer edge of medial area; postmedial area creamy brown, the postmedial

line dark and incurved below the cell; subterminal line not defined; the terminal area irrorated with brown; a terminal series of distinct black lunules; cilia brown intersected with whitish. Hind wing blackish with a broad yellowish white medial band with the large blackish discoidal lunule on it. Underside of fore wing mottled blackish and yellow with a distinct broad postmedial band; hind wing pale yellowish with large black discoidal spot and narrow interrupted irregular subterminal band; both wings with terminal series of black striæ.

Hab. U.S.A., Louisiana, Sabine Parish. *Exp.* 27 millim. This species is unknown to me, figured from a drawing from type in Coll. J. B. Smith.

4979. Pseudacontia crustaria.

Tarache crustaria, Morr. Proc. Ac. Nat. Sci. Phil. 1875, p. 70; Smith, Cat. Noct. N. Am. p. 273.

Head and thorax red-brown mixed with white and some blackish scales; palpi at base and pectus white; tibiæ and tarsi yellow-brown ringed with white; abdomen white with brownish segmental bands. Fore wing red-brown mixed with some white and black scales, the medial and postmedial areas tinged with bluish white except towards costa; subbasal line represented by black striæ from costa and cell defined by black scales; a broad antemedial white band diffused on outer side; orbicular and reniform very small, black defined by white, the former round; a postmedial white band, excurved from below costa to vein 5, then incurved, some

Fig. 234.—*Pseudacontia crustaria*, ♂. ½.

white points beyond it on costa; subterminal line slight, whitish, bent outwards below vein 7 and at middle where there is some black suffusion before it; a terminal series of black striæ; cilia red-brown mixed with white and with a blackish line through them. Hind wing fuscous brown slightly irrorated with whitish; a faint dark diffused medial line defined by whitish on outer side; a fine dark terminal line; cilia whitish and brown with a dark line near base; the underside white with some blackish irroration on veins of basal area, a diffused sinuous blackish medial line and subterminal band.

Hab. U.S.A., Nebraska, Colorado, 1 ♂, 1 ♀. *Exp.* 30 millim.

*4980. **Pseudacontia cansa.** (Plate CXLVIII. fig. 28.)

Pseudacontia cansa, Smith, Ann. N.Y. Ac. Sci. xviii. p. 119 (1908).

Head and thorax white mixed with glossy grey; abdomen grey with white segmental lines. Fore wing glossy grey; an antemedial white band, rather diffused on inner area in male; orbicular a black point; reniform a small black lunule on inner edge of the white postmedial band which is rather diffused on inner area in male; subterminal line whitish, very irregular, obsolescent at middle, in some specimens defined on inner side by brown scales; an apical patch of golden brown scales; a terminal series of black points; cilia indistinctly intersected with whitish. Hind wing fuscous grey with a diffused whitish medial band, more distinct in male which has a slight dark discoidal lunule. Underside of fore wing fuscous at base shading to white before the broad blackish subterminal band with the area beyond it whitish, a small black discoidal lunule; hind wing whitish with subbasal dark band, blackish discoidal lunule, and broad blackish subterminal band.

Hab. U.S.A., Kansas, Hamilton Co. *Exp.* 24 millim. This species is unknown to me, figured from a drawing from type in Coll. J. B. Smith.

4981. **Pseudacontia aterrima.** (Plate CXLVII. fig. 16.)

Oncocnemis aterrima, Grote, Can. Ent. xi. p. 199 (1879); Smith, Cat. Noct. N. Am. p. 163.

♀. Head, thorax, and abdomen brown mixed with whitish; tarsi ringed with white. Fore wing fuscous brown slightly tinged and irrorated with grey; subbasal line represented by black striæ from costa and cell defined on each side by brown scales; antemedial line black, indistinct, oblique, waved; claviform narrow, brownish defined by some black scales; orbicular and reniform brownish defined by black, the former round, the latter open above and below; postmedial line indistinctly double filled in with white and with white suffusion beyond it leaving slight dark streaks on the veins, slightly bent outwards below costa, excurved to vein 4, then incurved and again excurved to inner margin, some white points beyond it on costa; a subterminal series of white points in the interspaces with small black marks before them placed on brownish streaks, excurved below vein 7 and at middle; a terminal series of small black lunules. Hind wing black-brown with a slight greyish tinge; an indistinct pale medial line, somewhat excurved at middle and oblique to inner margin; cilia black-brown at base, white at tips. Underside of both wings black-brown irrorated with white, a whitish band beyond the postmedial line.

Hab. U.S.A., California, Havilah, 1 ♀ type. *Exp.* 28 millim.

*4982. **Pseudacontia groteana.** (Plate CXLVIII. fig. 18.)

Pseudacontia groteana, Dyar, Proc. Ent. Soc. Wash. v. p. 225 (1903).

♂. Head and thorax greyish; abdomen black. Fore wing

greyish black; the medial area darker; antemedial line indistinct, fine, grey, waved; orbicular and reniform defined by white; postmedial line white, strongly excurved beyond the cell and with white irroration beyond it; subterminal line irregular, defined by the terminal area being suffused with grey. Hind wing black.

Hab. U.S.A., Arizona, Williams. *Exp.* 22 millim. This species is unknown to me, figured from a drawing from type in U.S. Nat. Mus.

Genus **COPANARTA**.

Type.

Copanarta, Grote, Abh. Ver. Bremen, xiv. p. 111 (1895), non descr.... *aurea*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to middle of frons and fringed with long hair in front, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the pro- and metathorax with spreading crests; tibiæ fringed with rather long hair, the fore tibiæ with curved claw on inner side; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4983. **Copanarta aurea.**

Pseudanarta aurea, Grote, Bull. Geol. Geog. U.S. Surv. Terr. v. p. 205 (1879); Smith, Cat. Noct. N. Am. p. 149.
Oncocnemis nigerrima, Smith, J. N.Y. Ent. Soc. xi. p. 10 (1903).

♂. Head and thorax fuscous, the scales tipped with grey-white, tarsi black ringed with white; abdomen blackish ringed with white. Fore wing fuscous suffused and irrorated with purplish grey, the scales edged with grey, the veins slightly streaked with black, the basal half of medial area blacker; antemedial line black, strongly excurved and slightly angled inwards on vein 1; claviform and orbicular faintly defined by black, the latter small, round;

Fig. 235.—*Copanarta aurea*, ♂. ½.

reniform white with brown suffusion in centre, rather rounded; an indistinct medial line on outer edge of dark area; postmedial line black, slightly bent outwards below costa, excurved to vein 2, incurved at submedian fold, then again excurved; subterminal line grey, rather irregularly dentate and with short black streaks before it in the interspaces; a fine black terminal line; cilia grey mixed with fuscous, a dark line near base and whitish tips. Hind wing

reddish orange with rather broad terminal black band with curved inner edge; cilia brownish at base, whitish at tips. Underside of fore wing fuscous with the reniform white, hind wing with the costal area black.

Ab. 1. *nigerrima*. Fore wing with the basal area suffused with black, the black on medial area extending to postmedial line.

Hab. U.S.A., Texas, 1 ♂ type, Shovel Mts., 1 ♂, Arizona, Yuma Co., 1 ♂. *Exp.* 20–24 millim.

Genus **MYDRODOXA**.

	Type.
Mydrodoxa, Butl. A. M. N. H. (5) v. p. 340 (1880)	*splendens*.

Proboscis fully developed; palpi porrect, short, fringed with hair below; frons smooth; eyes large, round; antennæ of female almost simple (broken off short); thorax clothed with long rough hairs only, the prothorax without distinct crest, the metathorax with large spreading crest; tibiæ thickened, moderately fringed with hair; abdomen clothed with rough hair but without crests. Fore wing long and narrow, the apex rounded, the termen obliquely curved and not crenulate; vein 3 from well before angle of cell; 5 from above angle; 9 from 10 anastomosing with 8 to form the areole; 6 from the areole; 11 from cell. Hind wing with vein 3 from near angle of cell; 5 absent; 6, 7 stalked; 8 anastomosing with the cell near base only.

4984. Mydrodoxa splendens.

Mydrodoxa splendens, Butl. A. M. N. H. (5) v. p. 341 (1880); Kirby, Cat. Lep. Het. p. 125.

♀. Head and thorax black, the vertex of head and metathoracic crest crimson; legs suffused with metallic blue; abdomen black suffused with metallic blue, the last five segments crimson except on ventral surface, the base of 4th segment with black dorsal spot. Fore wing deep metallic peacock blue; patches of black hair at base of cell and inner margin; the area from near base to beyond

Fig. 236.—*Mydrodoxa splendens*, ♀. ½.

middle suffused with golden cupreous except at costa and inner margin; a broad erect deep blue-black medial band, its outer edge slightly excurved from below costa to submedian fold. Hind wing deep metallic blue, the basal half and inner area clothed with black hair. Underside of both wings deep metallic blue.

Hab. Madagascar, Fianarantsoa (*Cowan*), 1 ♀ type. *Exp.* 46 millim.

Genus DAPHÆNURA.

Type.

Daphænura, Butl. A. M. N. H. (5) ii. p. 457 (1878) ..... *fasciata*.

Proboscis fully developed; palpi porrect, extending to well beyond frons, the 2nd joint clothed with long hair, the 3rd moderate; frons smooth; eyes large, round; antennæ of male minutely serrate and fasciculate; thorax clothed with long rough hair only and without crests; tibiæ clothed with rough hair; abdomen clothed with rough hair and without crests, the male with tufts of long hair from the basal stigmata, the claspers large and tufted with hair. Fore wing rather narrow and elongate, the apex rounded, the termen obliquely curved; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4985. Daphænura fasciata.

Daphænura fasciata, Butl. A. M. N. H. (5) ii. p. 457 (1878); Kirby, Cat. Lep. Het. p. 204.

Head and thorax bright crimson; palpi and antennæ black; patagia with the outer edge and tips black; pectus and legs black; abdomen black with the last two segments bright crimson except below. Fore wing black; subbasal line orange, oblique, from costa to submedian fold; two oblique orange antemedial bands with

Fig. 237.—*Daphænura fasciata*, ♂. ½.

rather irregular edges, the outer arising just below costa and somewhat expanding towards inner margin; a medial orange band expanding on costal half into a large patch with curved outer edge and enclosing the black reniform, not quite reaching inner margin; a postmedial orange band, excurved from costa to vein 4, then incurved and narrowing to inner margin. Hind wing orange-yellow; the inner area black, its upper edge slightly angled above tornus; a black terminal band expanding slightly at apex. Underside of fore wing orange, the base black, an incurved medial blackish band obsolescent at middle, reniform black, a black postmedial band excurved from costa to vein 4, then incurved, and a terminal band; hind wing with traces of oblique medial line formed by a few black scales, black discoidal point and some scales on costa beyond middle, the inner and terminal areas as above.

Hab. Madagascar, Ellongo (*Cowan*), 1 ♂, 1 ♀ type, Fianarantsoa (*Cowan*), 1 ♂, 1 ♀. *Exp.* 54–60 millim.

Genus **HYPOCALAMIA**, nov.

Type, *H. meterythra.*

Proboscis fully developed; palpi obliquely upturned, the 2nd joint reaching about to middle of frons and moderately fringed with scales in front, the 3rd short; frons smooth; eyes large, rounded; antennæ of male ciliated; thorax clothed with hair only and without crests; tibiæ moderately fringed with hair; abdomen without crests. Fore wing with the apex rounded, the termen evenly curved and non-crenulate; veins 3 and 4 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4986. **Hypocalamia meterythra.**

Bombycia meterythra, Hmpsn. Moths Ind. ii. p. 207 (1894).

♂. Head and thorax pale pinkish flesh-colour mixed with bright red; tarsi red with slight white rings; abdomen pale ochreous brown, the anal tuft fulvous. Fore wing tinged with ochreous and irrorated with brown, suffused in parts with yellow-brown and the medial area with pale pink; subbasal line brown defined by white on outer side, waved, from costa to submedian fold; antemedial line brown defined by white on inner side, angled inwards in cell, then oblique, waved; claviform absent; orbicular and reniform with pink centres and slight white annuli defined by dark brown, the former round, connected by streaks below subcostal and above median nervures with the latter which is defined on

Fig. 238.—*Hypocalamia meterythra*, ♂. ½.

outer side by small dentate brown marks, the mark at upper extremity extending to postmedial line; a diffused medial line oblique from costa to median nervure, then inwardly oblique; postmedial line formed by dark brown lunules defined by white on outer side, bent outwards below costa, excurved to vein 4, then incurved, some white points beyond it on costa; subterminal line defined by red-brown suffusion on its inner side, angled outwards at veins 7, 6, 4, 3, 2, and to tornus, and with a diffused dentate line beyond it except towards apex which is whitish; a terminal series of blackish striæ; cilia pale red. Hind wing bright brick-red, the cilia yellowish white; the underside brick-red, the costal area paler, a faint discoidal spot and diffused curved postmedial line.

Hab. Punjab, Murree, 1 ♂ type. *Exp.* 36 millim.

Subfamily ACRONYCTINÆ.

ADDENDA AND CORRIGENDA.

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Page 22, under *Syntomopus* insert **Pyrois**, Hübn. Verz. p. 208 (1827), type *cinnamomea*, which has precedence.

Page 26, under **Amphipyra** del. *Pyrois*.

Page 35. 2766. **Amphipyra tragopoginis**, insert

Ab. *brayi*, Lambillion, Rev. Ent. Namur, 1907, p. 29.

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*2805 *a*. **Dipterygia dolens.** (Plate CXLVIII. fig. 12.)

Macronoctua dolens, Druce, A. M. N. H. (8) iii. p. 459 (1909).

♂. Head and thorax fuscous black irrorated with white, the upper edge of patagia and streaks above them white, the ridge-like crests whitish; basal joint of antennæ white; tarsi ringed with white; abdomen fuscous, whitish subdorsally. Fore wing fuscous, the inner area except at base and patches at apex and on terminal area from vein 3 to tornus whitish; subbasal line represented by an oblique black striga from costa and striga from cell; antemedial line black, angled outwards below costa and strongly inwards in cell and at vein 1, excurved below the cell and above inner margin, a black streak from it to postmedial line in submedian fold; orbicular almost obsolete, round; reniform slightly defined by black on outer side; postmedial line black, very strongly bent outwards below costa, oblique to vein 6, slightly incurved at discal fold, excurved at middle, then incurved and sinuous and angled inwards in submedian fold, crossed by black streaks in the interspaces between veins 7 and 2 extending to termen except on the white areas; traces of a waved subterminal line. Hind wing semihyaline white, the extremities of veins with slight black streaks, longer towards apex, slight fuscous streaks above and below extremity of vein 7 followed by points to vein 3; the underside with the costal area white slightly irrorated with brown; hind wing with vein 5 nearly fully developed from above angle of cell.

Hab. PERU, Huancabamba (*Boettger*), type † ♂ in Coll. Druce. *Exp.* 60 millim.

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*2820 *a*. **Parastichtis migrata.** (Plate CXLVIII. fig. 30.)

Luperina migrata, Smith, J. N.Y. Ent. Soc. xi. p. 188 (1903).

♀. Head, thorax, and abdomen fuscous brown; frons darker; tegulæ pale at base and with black medial line; patagia dark at outer edge. Fore wing brown suffused with fuscous; a sinuous black streak below base of cell; subbasal line represented by a black striga from costa; antemedial line black, dentate, double at costa and with oblique black streak before it above inner margin, in submedian interspace merged in the claviform which is defined by black, acute at extremity and with black streak from it to postmedial line; orbicular with slight pale annulus defined by black, large, oblique elliptical; reniform large, with pale annulus defined by black on inner side and below; a diffused blackish medial shade, oblique from costa to median nervure, then inwardly oblique; postmedial line double, bent outwards below costa, then strongly dentate, oblique below vein 4, veins 6 and 3 beyond it defined by pale streaks; the interspaces of terminal area with black streaks ending in the terminal lunules and interrupted by traces of the pale dentate subterminal line; cilia brown with a series of ochreous points at base. Hind wing white, the veins and terminal area suffused with brown; a lunulate blackish terminal line; cilia whitish; the underside with the costal and terminal areas irrorated with brown, a small discoidal lunule and distinct postmedial line.

Hab. U.S.A., ? New Jersey, Utah, Stockton. *Exp.* 48 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

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2823 *a*. **Parastichtis standfussi.** (Plate CXLVII. fig. 17.)

Hadena standfussi, Turati, Nat. Sicil. xx. p. 27, pl. 6. ff. 17, 18 (1907).
Hadena sardoa, Turati, Nat. Sicil. xxi. p. 88, pl. vi. ff. 5, 6 (1909).
Hadena corsica, Turati, Nat. Sicil. xxi. p. 88, pl. vi. ff. 7, 8 (1909).
Hadena sicula, Turati, Nat. Sicil. xxi. p. 88, pl. vi. ff. 3, 4 (1909).

♂. Head and thorax white mixed with brown; palpi blackish above; frons with slight lateral black bars; patagia with black streaks near upper edge; thoracic crests with some black at tips; abdomen white slightly tinged with brown, the crests with some black at tips. Fore wing white slightly tinged with red-brown and irrorated with black, the medial area, postmedial costal area, and terminal area suffused with blackish; a sinuous black streak below base of cell; subbasal line represented by an oblique black striga from costa; an oblique black streak above inner margin before the antemedial line, which is black defined on inner side by white, angled outwards below costa and in cell and strongly above and below vein 1; a black streak in submedian fold between the ante- and postmedial lines; orbicular and reniform defined by

black, the former white, small, narrow, oblique, the latter grey, angled inwards on median nervure, large; postmedial line black defined on outer side by white, bent outwards below costa, oblique to vein 6, then dentate and oblique below vein 5, some white points beyond it on costa; postmedial area whiter except at costa; subterminal line defined on inner side by small dentate black marks below vein 8 and at middle and blackish streaks beyond it in the interspaces, angled outwards at vein 7 and to termen at veins 4, 3; a terminal series of small black lunules; cilia brownish white mixed with black. Hind wing white, the veins and terminal area slightly tinged with brown; the underside with the costal area slightly irrorated with fuscous.

Ab. 1. *corsica*. A grey form suffused with fuscous brown.—Corsica.

Ab. 2. *sicula*. A grey form more uniformly suffused with brown, the medial area suffused with black in male.—Sicily.

Ab. 3. *sardoa*. A grey form suffused with brown and the medial area with black.—Sardinia.

Hab. Corsica; Sardinia; Sicily, 1 ♂. *Exp.* 44 millim.

*2823 *b*. **Parastichtis ribbei.** (Plate CXLVII. fig. 18.)

Hadena ribbei, Püng. Iris, xix. p. 77, pl. v. f. 3 & vi. f. 1 (1906).

Head and thorax grey-white mixed with red-brown and black; frons with black bar above; antennæ black; tegulæ with black medial line; tarsi fuscous with pale rings; abdomen grey suffused with reddish brown, the crests with some black scales. Fore wing white irrorated with red-brown and some black scales; a sinuous black streak in base of submedian fold; subbasal line slight, black, waved, from costa to submedian fold; antemedial line black defined on inner side by white, angled outwards below costa, then oblique and waved below submedian fold; the medial area suffused with bright rufous from below costa to vein 1 except beyond the reniform and with a diffused black streak above vein 1; orbicular white defined by black, small, oblique; reniform with faint white annulus defined on inner side by black, its outer edge hardly traceable; a faint blackish medial shade from costa to reniform; postmedial line blackish, indistinctly double filled in with white, bent outwards below costa, then slightly waved, excurved to vein 5, then oblique, some white points beyond it on costa; subterminal line represented by very faint whitish lunules with small dentate black marks before them above and below vein 4; faint triangular dark shades from termen at discal and submedian folds; a terminal series of small triangular black spots; cilia chequered reddish brown and white. Hind wing white faintly tinged with brown, the veins and terminal area browner; a faint dark discoidal spot and terminal series of slight lunules; cilia white; the underside white, the costal area slightly irrorated with brown, a faint discoidal lunule and curved subterminal line.

Hab. Spain, Andalusia, Sierra de Alfacar, type † ♂, ♀ in Coll. Püngeler. *Exp.* 36 millim.

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2830. **Parastichtis monoglypha** del. *Hadena polyglypha* and insert Ab. *dissoluta*, Krul. Rev. Russ. Ent. vii. p. 10 (1907).

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*2830 *a*. **Parastichtis polyglypha.** (Plate CXLVII. fig. 19.)

Hadena polyglypha, Staud. Iris, iv. p. 286 (1891); id. Cat. Lep. pal. p. 173.

♂. Head and thorax grey-white mixed with rufous; palpi brownish at sides; antennæ brownish; tegulæ with black medial line; tarsi fuscous ringed with white; abdomen whitish tinged with rufous, the crests with some black scales at tips. Fore wing grey-white thickly irrorated with rufous, the veins with slight dark streaks; subbasal line indistinctly double filled in with white, dentate, from costa to submedian fold, in base of which there is a sinuous black streak; an oblique black streak above inner margin near base; antemedial line blackish defined on inner side by white, double at costa, oblique, dentate, strongly bent inwards to inner margin; claviform slightly defined by black and with black streak from its lower edge to postmedial line; orbicular whitish defined by black, somewhat oblique elliptical; reniform rufous defined rather irregularly by black, large; medial shade faint, oblique below the cell; postmedial line black defined on outer side by white, bent outwards below costa, then dentate, excurved to vein 4, then oblique, some white points beyond it on costa; subterminal line slight, white, angled outwards at vein 7 and dentate to near termen at veins 4, 3, the area beyond it suffused with rufous; a terminal series of small rather triangular blackish spots; cilia rufous intersected with white. Hind wing whitish tinged with brown, the veins and terminal area suffused with brown; a brown discoidal lunule; cilia white with a brownish line through them towards apex; the underside white, the costal area and terminal area to vein 2 slightly irrorated with brown, a blackish discoidal spot and curved postmedial line except on inner area.

Hab. Palestine, Petra, in Coll. Püngeler. *Exp.* 40 millim.

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2848 *a*. **Parastichtis ona.** (Plate CXLVII. fig. 20.)

Luperina ona, Smith, J. N.Y. Ent. Soc. xvii. p. 58 (1909).

♂. Head and thorax black-brown slightly mixed with grey; tegulæ with black medial line; tarsi ringed with whitish; abdomen black-brown mixed with white especially at base of sides. Fore wing deep iron-brown suffused with greyish fuscous, especially on costal area and in cell; subbasal line represented by double black striæ from costa; antemedial line double, angled outwards below costa, in submedian fold and above inner margin, oblique to above inner margin, then bent inwards, a black streak from it to post-medial line in submedian fold; claviform defined by an oblique black line above; orbicular and reniform with slight whitish

annuli defined by black, the former oblique elliptical, the latter with the white on outer edge broken up into small spots; postmedial line double at costa, bent outwards below costa, then dentate, oblique below vein 4, some whitish points beyond it on costa; subterminal line represented by a series of dentate black marks in the interspaces except towards costa; a terminal series of small black lunules; cilia with a fine grey line at base. Hind wing pure white, the veins streaked with brown towards termen which is slightly irrorated with brown; the underside with some dark irroration on costa.

Hab. U.S.A., Arizona, Prescott (*Kunzé*), 1 ♂, Sta. Catalina Mts., Huachuca Mts., Minnehaha. *Exp.* 48 millim.

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2854. Parastichtis *suffusca* insert *Tæniocampa* alia, Guen. Noct. i. p. 352 (1852), which has precedence.

Page 118. *2864 *a*. **Trachea confluens.**

Dianthœcia confluens, Moore, P. Z. S. 1881, p. 354, pl. 38. f. 20; Hmpsn. Moths Ind. ii. p. 220.

Head, thorax, and abdomen reddish brown. Fore wing reddish brown; subbasal line double, black filled in with ochreous, sinuous, from costa to vein 1; antemedial line double, black filled in with ochreous, sinuous; claviform defined by black and extending to median nervure; orbicular and reniform with brown centres and ochreous annuli defined by black, the former oblique and nearly conjoined below to the latter which is angled inwards on median nervure; the bases of veins 3, 2 with pale streaks; postmedial line double filled in with ochreous, minutely waved, oblique below vein 4; a rather diffused pale subterminal line; a terminal series of slight black lunules. Hind wing greyish tinged with brown especially on terminal area; an indistinct curved postmedial line defined on outer side by whitish.

Hab. Sikhim, type † ♂ in Mus. Berlin. *Exp.* 36 millim.

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2879. **Trachea breviuscula** transfer to after 2958. **Trachea pausis.** Germ. E. Africa, Kilima'njaro (*Sjöstedt*), 1 ♂.

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2894. **Trachea** *chalcochlora* insert *Ilattia* **monilis**, Moore, P. Z. S. 1881, p. 348, pl. 38. f. 11; Hmpsn. Moths Ind. ii. p. 252, which has priority; type † in Mus. Berlin.

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2907 *a*. **Trachea ochrotica**, n. sp. (Plate CXLVIII. fig. 9.)

♂. Head, thorax, and abdomen brownish ochreous with some fuscous mixed; palpi and sides of frons more fuscous; tibiæ and tarsi fuscous with pale rings. Fore wing ochreous with a faint

olive-green tinge, suffused with brown and irrorated with black and rufous scales; subbasal line double, black, waved, from costa to vein 1; antemedial line black, double at costa, then oblique, sinuous; claviform an ill-defined black mark; orbicular and reniform ochreous defined by black, the former rather oblique elliptical, the latter somewhat quadrate; medial line represented by an incurved striga before the reniform and incomplete oblique line from lower angle of cell; postmedial line indistinctly double, black filled in with ochreous, strongly bent outwards below costa, then minutely waved, oblique below vein 4, some pale points beyond it on costa; a maculate ochreous subterminal line defined on each side by blackish marks, excurved at middle; a terminal series of small black spots. Hind wing ochreous suffused with brown; the underside with slight discoidal lunule.

Hab. Formosa, Kagi Distr., 7000′, 3 ♂ type. *Exp.* 36 millim.

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*2922 *a*. **Trachea susquesa.** (Plate CXLVII. fig. 21.)

Hadena susquesa, Smith, Ann. N.Y. Ac. Sci. xviii. p. 116 (1908).

♂. Head ochreous tinged with rufous; tegulæ ochreous grey at base, leaden grey at tips; thorax reddish ochreous irrorated with grey and fuscous, the centres of patagia ochreous; abdomen ochreous tinged with rufous. Fore wing ochreous tinged with rufous and suffused in parts with red-brown and grey; a red-brown streak below base of cell; subbasal line absent; antemedial line only traceable by the medial area being more suffused with grey and with dark streaks on the veins; claviform large, defined by red-brown and extending nearly to postmedial line; orbicular and reniform with greyish centres and ochreous annuli defined by red-brown, the former round; postmedial line represented by a striga from costa, obsolete to vein 4, then oblique and minutely dentate, veins 4, 3 beyond it defined by slight whitish streaks; subterminal line represented by dentate rufous patches in the interspaces; a terminal series of slight blackish lunules; cilia intersected with yellow and with slight yellowish line at base. Hind wing fuscous brown; a dark discoidal spot; a fine dark terminal line; cilia tipped with white; the underside greyish ochreous irrorated with brown, a dark discoidal spot and postmedial line.

Hab. U.S.A., California, Claremont, San Diego. *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

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2923 *a*. **Trachea umbrifacta**, n. sp. (Plate CXLVII. fig. 22.)

♀. Head and thorax blue-grey mixed with some brown; palpi with the 2nd joint black above; frons with black bar; tegulæ with black lines at middle and near tips; patagia edged with black; legs with black marks at femoro-tibial joints, the outer spurs and tarsi

ringed with black; abdomen grey mixed with brown, the crests with some black at tips. Fore wing blue-grey mixed with brown; a sinuous black streak below base of cell with some brown below it; antemedial line double, slightly angled outwards below costa, oblique to submedian fold and bent inwards to inner margin, an oblique brown shade before it on inner area, a black streak from it to postmedial line in submedian fold with some brown suffusion above and below it; orbicular and reniform with whitish annuli incompletely defined by black, the former very oblique, the latter narrow; postmedial line double, with two blackish points at costa, bent outwards and obsolescent below costa, oblique to vein 5, then inwardly oblique and slightly excurved at vein 2, some whitish points beyond it on costa; subterminal line whitish defined on inner side by dentate black marks at middle, angled outwards to near termen at veins 6, 7 and to termen at veins 4, 3 and with red-brown suffusion beyond it except towards apex; a terminal series of small black lunules. Hind wing whitish tinged with brown especially on the veins and terminal area; a black terminal line; cilia white with a brown line through them from apex to vein 2; the underside irrorated with brown, a brown discoidal lunule, crenulate postmedial line, and indistinct subterminal shade.

Hab. U.S.A., Utah, Stockton (*Spalding*), 1 ♀ type. *Exp.* 44 millim.

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2931 *a*. **Trachea ferida.** (Plate CXLVII. fig. 23.)

Hadena ferida, Smith, Ann. N.Y. Ac. Sci. xviii. p. 115 (1908).

♀. Head and thorax black mixed with red-brown and grey; frons with black bar; tegulæ with black lines at middle and near tips; tarsi slightly ringed with whitish; abdomen grey mixed with brown, the crests blackish. Fore wing greyish thickly irrorated and suffused with black-brown and in parts with rufous especially on postmedial area, the medial area darker towards inner margin; subbasal line double, black, interrupted, from costa to the sinuous black streak in base of submedian fold; antemedial line double filled in with greyish, the inner line indistinct, strongly excurved and slightly waved; claviform blackish, acute and extending to postmedial line; orbicular and reniform large, defined by black, the former oblique elliptical; postmedial line double, the outer line indistinct, bent outwards below costa, then slightly waved, oblique to vein 4, then incurved, some pale points beyond it on costa; subterminal line represented by a series of whitish lunules defined on inner side by slight dentate blackish marks, very slightly excurved below vein 7 and dentate at veins 4, 3 and with faint dark streaks beyond it in the interspaces to the terminal series of slight black lunules; cilia with a fine pale line at base. Hind wing whitish suffused with reddish brown; a fine dark terminal line; cilia with a whitish line at base; the underside whitish irrorated with blackish, a discoidal spot and diffused postmedial line.

Hab. Newfoundland, 1 ♀ cotype. *Exp.* 42 millim.

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2974. **Trachea consummata** insert (syn.) *Apamea macrostigma*, Snell. Tijd. v. Ent. xxiii. p. 46, pl. 4. f. 4 (1880).—Celebes.

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2989 *a*. **Trachea formosensis**, n. sp. (Plate CXLVIII. fig. 10.)

♂. Head and tegulæ deep rufous with some grey scales; thorax grey-white with a few black scales on upper edge of patagia; legs fuscous, the femora fringed with rufous hair, the tarsi with pale rings; abdomen grey with obscure fuscous bands, the dorsal crests tipped with black, the anal tuft and ventral surface tinged with rufous. Fore wing deep rufous, the inner area to near tornus and the antemedial area except towards costa grey-white, the postmedial area except towards costa and an apical patch ochreous white tinged with rufous, the veins with slight dark streaks; subbasal line double, blackish, waved, from costa to vein 1; antemedial line indistinctly double filled in with white, bent inwards below costa, then obliquely excurved; claviform defined by black at extremity; orbicular defined by black, oblique elliptical; reniform filled in with white except at inner side, defined by black, its centre also defined by black; traces of a waved blackish medial line, oblique from costa to medial nervure; postmedial line double, black filled in with white, bent outwards below costa, then waved and produced to black and white points on the veins. incurved below vein 4, some white points beyond it on costa; subterminal line whitish, angled outwards at vein 7 and excurved at middle, a black streak before it below vein 2, a terminal series of small black lunules; cilia blackish with a reddish ochreous line at base. Hind wing grey suffused with brown, an ochreous line at base of cilia; the underside ochreous white, the costa and terminal areas irrorated with fuscous, a discoidal spot and sinuous postmedial line.

Hab. Formosa, Kagi District, 7000′, 6 ♂ type. *Exp.* 46 millim.

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3035. **Euplexia polycmeta** is from N.S.W., Blue Mountains, Lawson, not Brisbane.

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*3037 *a*. **Euplexia callichroa.** (Plate CXLVII. fig. 24.)

Caradrina callichroa, Lower, Tr. R. Soc. S. Austr. xxvi. p. 225 (1902).

♀. Head and base of tegulæ rufous; thorax clothed with white, red-brown and black scales; abdomen grey mixed with rufous and dark brown, the crests dark. Fore wing grey largely suffused with dark brown and with red-brown on medial area; a waved subbasal black line from costa to vein 1, defined on outer side by white; a waved antemedial line defined by white on inner side on inner area; orbicular rufous with black outline, oblique elliptical; reniform white with rufous centre, diffused to costa, and defined on inner side by the black medial shade; the postmedial line strongly dentate, excurved from below costa to vein 3, then incurved; a

waved dark subterminal line defined by grey on outer side and excurved below costa and at middle; a curved black streak on vein 2 from just beyond the postmedial line. Hind wing white suffused with reddish brown except towards costa; a dark discoidal spot and sinuous postmedial line. Underside white; both wings with distinct discoidal spots and postmedial line, the terminal area suffused with reddish brown.

Hab. Victoria, Melbourne, type † ♀ in Coll. Lower. *Exp.* 34 millim.

*3037 *b*. **Euplexia melanops.** (Plate CXLVII. fig. 25.)

Caradrina melanops, Lower, Tr. R. Soc. S. Austr. xxvi. p. 226 (1902).

♂. Head and thorax grey mixed with black; frons black at sides; abdomen white mixed with fuscous, the dorsal crests black. Fore wing brown suffused with grey and irrorated with black, the medial area suffused with black; indistinct waved black subbasal and antemedial lines; orbicular and reniform round, indistinctly outlined with black; the postmedial line indistinct, double, strongly bent outwards below costa, excurved to vein 3, then incurved; traces of an irregular subterminal line with some black on it towards costa; a black terminal line. Hind wing white with large black apical patch extending down to vein 2. Underside white; fore wing with the costal and terminal areas blackish; hind wing with discoidal lunule and black apical patch.

Hab. S. Australia, Parkside, type † ♂ in Coll. Lower. *Exp.* 34 millim.

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3067 *a*. **Heterochroma thermographa**, n. sp. (Plate CXLVIII. fig. 14.)

♂. Head, thorax, and abdomen red-brown mixed with dark brown; mid and hind tibiæ at extremities and the spurs ringed with yellow, the tarsi yellowish; abdomen yellowish at sides. Fore wing red-brown suffused with black-brown; subbasal line reddish yellow, from costa to median nervure; antemedial line reddish yellow, angled outwards below costa to the orbicular, then inwards in cell where it emits an oblique spur to vein 1 near base, very oblique from middle of cell to inner margin at postmedial line; the medial area with a fine white streak on vein 1 and minute white streaks on the veins before the postmedial line; orbicular and reniform defined by yellowish, the former oblique elliptical, the latter slightly angled inwards on median nervure and with a whitish bar on its outer edge; postmedial line dark defined on each side by reddish yellow, bent outwards below costa, excurved to vein 5, then obliquely incurved, a bifid reddish streak beyond it below vein 7 to the subterminal line and some white points on costa; subterminal line white and reddish from costa to vein 7 where it is angled inwards, then formed of reddish striæ with small quadrate black marks before and beyond them; cilia intersected

by minute whitish streaks. Hind wing pale yellowish suffused with reddish brown except on basal half of inner area; an indistinct brown discoidal spot and pale curved postmedial line; cilia yellowish and red-brown; the underside yellowish, the costal area suffused with brown and irrorated with white, the terminal area irrorated with brown, a dark spot at upper angle of cell and minutely waved postmedial line excurved from costa to vein 4.

Hab. W. Colombia, San Antonio (*Palmer*), 2 ♂ type. *Exp.* 34-40 millim.

Page 309. *3104 *a*. **Perigea eguigureni.**

Prometopus eguigureni, Dognin, Le Naturaliste, (2) iv. p. 176 (1890); id. Lép. Loja, p. 58, pl. 6. f. 4.

♀. Head and tegulæ yellowish white mixed with rufous; thorax yellowish white with rufous dorsal stripe: legs with rufous mixed, the mid and hind tibiæ with oblique black bar near extremities, the tarsi rufous ringed with white; abdomen yellowish white mixed with some brown, the crests with black and rufous mixed. Fore wing yellowish white tinged with rufous especially in, below, and beyond end of cell, the terminal area suffused with rufous except at apex, a rufous streak on inner margin from near base; subbasal line represented by double rufous striæ from costa; antemedial line indistinct, double, slightly waved, oblique from costa to median nervure, the outer line with black point at costa; orbicular a faint round whitish mark; reniform whitish with rufous bar in centre, constricted at middle; postmedial line indistinct, double, with series of double black points beyond it on the veins, bent outwards below costa and incurved below vein 4; subterminal line deep rufous, rather diffused, angled outwards at vein 7 and excurved at middle; a terminal series of black and brown points defined on inner side by slight white lunules and a more prominent lunule above tornus. Hind wing yellowish white, the veins and terminal area suffused with rufous; a lunulate brown terminal line; cilia yellowish at base, white at tips, a brown line through them except towards tornus; the underside with the costal area irrorated with brown, the apical area suffused with rufous, a black discoidal point, curved postmedial series from costa to vein 2, and terminal series of small lunules.

Hab. Ecuador, Zamora, type † ♀ in Coll. Dognin. *Exp.* 38 millim.

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3137. **Perigea** *confundens* del. *Mamestra confundens*, Wlk.: the species will stand as **Perigea aroana**, Beth.-Baker.

Page 335. 3142. **Perigea tetera** insert (syns.)

Celæna inquieta, Wlk. xv. 1687 (1858).
Caradrina distans, Wlk. xv. 1694 (1858).

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3155 *a*. **Perigea albistriata,** n. sp. (Plate CXLVII. fig. 26.)

♀. Head and thorax ochreous white mixed with deep ferruginous red; tegulæ with blackish medial line; prothoracic crest with blackish bars; pectus, legs, and abdomen whitish tinged with brown, the tarsi fuscous with pale rings, the dorsal crests with dark tips. Fore wing ochreous whitish suffused with ferruginous red, the terminal area darker except at costa; a fine dark streak below base of cell; antemedial line represented by slight double dark striæ from costa and fuscous and whitish points on median nervure and vein 1; a dark spot at lower angle of cell and reddish discoidal striga; postmedial line with double dark striæ from costa, then very indistinct, oblique to discal fold, then inwardly oblique and angled inwards above inner margin, some pale points beyond it on costa; the interspaces of terminal area from costa to vein 4 with deep ferruginous streaks defined on each side by whitish streaks, those above and below vein 5 extending almost to the cell; subterminal line absent; a terminal series of slight blackish points; cilia intersected with whitish. Hind wing whitish; the terminal area from costa to submedian fold suffused with rufous; cilia white; the underside white, the costal area and terminal area to vein 2 irrorated with rufous, a dark discoidal point.

Hab. Peru, Pozuzo, 1 ♀ type. *Exp.* 34 millim.

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3188. **Oligia** *glaucescens* insert *Erastria* **vermiculata,** Snell. Tijd. v. Ent. xxiii. p. 58, pl. v. f. 3 (1880), which has priority. Celebes, type † ♂ in Coll. Snellen.

Pages 380 & 385.

3203. **Oligia fractilinea** and 3210. **Oligia misera.**
Webster, Proc. Ent. Soc. Wash. viii. p. 66 (1907).

Reared from identical larvæ attacking young corn, eating the whole plant from the top downwards.

Page 406. *3237 *a*. **Œderemia confucii.**

Bryophila confucii, Alph. Rom. Mém. vi. p. 19, pl. 1. f. 8 (1892).

Antennæ of male serrate.

♂. Head and thorax ochreous white faintly tinged with rufous; antennæ ringed with blackish; abdomen ochreous white with ill-defined fuscous brown bands. Fore wing ochreous grey thickly irrorated with black, the medial area fuscous grey; subbasal line represented by black striæ from costa and cell; antemedial line black, angled outwards below costa, then oblique sinuous; orbicular and reniform large, ochreous grey, the former quadrate with slight blackish points in its angles, the latter strongly constricted at middle; a diffused blackish medial line, slightly angled outwards

below costa, then defining the outer edge of orbicular, oblique below the cell to inner margin at antemedial line; postmedial line black, bent outwards below costa, then dentate, incurved below vein 4 to inner edge of reniform, then defined on outer side by white, some whitish points on fuscous suffusion beyond it on costa; subterminal line represented by a series of faint whitish lunules with slight blackish marks before them, excurved at middle and incurved below

Fig. 239.—*Œderemia confucii*, ♂. ½.

vein 3; a terminal series of slight blackish lunules; cilia chequered white and pale brown, with a series of black striæ through them. Hing wing white tinged with brown except the costal area and cell; a diffused sinuous brown subterminal band; a fine dark terminal line from apex to submedian fold; cilia white faintly tinged with brown at base from apex to vein 2; the underside white, the apical area irrorated with brown, a blackish discoidal lunule and faint curved diffused postmedial line.

Hab. Tibet, Kuku-Nor, in Coll. Püngeler; China, Ou-pin. *Exp.* 36 millim.

Page 435. Under **Sidemia** insert *Rusidrina*, Staud. Rom. Mém. vi. p. 491 (1892), type *depravata*, for Sect. I.

3273. **Sidemia** *christophi*, insert *Valeria* **spilogramma**, Rmbr. Ann. Soc. Ent. Fr. 1871, p 321; Staud. Cat. Lep. pal. pp. 168, 255, which has precedence.

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3275. **Sidemia depravata**, insert (syn.) *Rusidrina rasdolnia*, Staud. Rom. Mém. vi. p. 491, pl. 7. f. 9 (1892); id. Cat. Lep. pal. p. 199.

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*3296 *a*. **Centropodia vhitei.** (Plate CXLVII. fig. 27.)

Hadena whitei, Rebel, Ann. Nat. Hofmus. Wien, xxi. p. 28 (1906).

♀. Head and thorax purplish brown mixed with grey; tegulæ with some black scales near upper edge; fore tibiæ and the tarsi blackish ringed with white; abdomen brown mixed with greyish ochreous. Fore wing red-brown suffused with purplish grey and with slight dark irroration; subbasal line double, waved, from costa to vein 1; antemedial line double, waved, oblique; claviform

small, slightly defined by brown; orbicular and reniform large, with slight pale annuli defined by black, the former oblique elliptical, the latter somewhat produced at lower extremity; a diffused curved dark medial line; postmedial line blackish, double towards costa, then indistinctly dentate and produced to black points on the veins, slightly bent outwards below costa, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line with dark patch before it on costa, angled outwards at vein 7, then represented by slight pale marks on dentate dark marks; a fine waved dark terminal line and pale line at base of cilia. Hind wing brown with a greyish tinge; cilia whitish at tips; the underside whitish tinged and irrorated with brown, a black discoidal spot, curved minutely crenulate postmedial line, and terminal series of lunules.

Hab. Canaries, Teneriffe, type † ♀ in Mus. Oxon. *Exp.* 50 millim.

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Genus **PSEUDAMATHES**, nov.

Type, *P. volloni.*

Proboscis aborted, minute; palpi porrect, hardly reaching as far as frons, which has a rounded prominence roughened in front and with triangular corneous plate below it; eyes large, round; antennæ of female minutely serrate and ciliated; thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair, the fore tarsi with three long curved claw-like spines on each side of the first two joints; abdomen with some rough hair at base, but without crests. Fore wing with the apex rounded, the termen evenly curved, not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

3296 *b*. **Pseudamathes volloni.**

Amathes volloni, D. Lucas, Bull. Soc. Ent. Fr. 1907, p. 342.

♀. Head and thorax white tinged with rufous; palpi above and sides of frons slightly blackish; abdomen white faintly tinged with rufous. Fore wing clothed with large rough scales, white suffused

Fig. 240.—*Pseudamathes volloni*, ♀. ½.

with rufous and slightly irrorated with brown; subbasal line rufous, curved, from costa to submedian fold; antemedial line rufous, oblique, waved from costa to submedian fold, angled inwards on

vein 1; orbicular a small round white spot: reniform an indistinct whitish spot at lower angle of cell; traces of a curved rufous medial shade; postmedial line indistinct, rufous with brown point at costa, bent outwards below costa, then dentate and produced to brown points on the veins, excurved to vein 4, then incurved, some whitish points beyond it on costa; subterminal line indistinct, rufous, excurved below vein 7 and at middle; a terminal series of slight blackish striæ. Hind wing white faintly tinged with rufous; an indistinct curved postmedial line; cilia white; the underside pure white.

Hab. Tunis, Kabili, 2 ♀. *Exp.* 36 millim. Type † in Coll. D. Lucas.

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Genus **PSEUDOPSEUSTIS**, nov.

Type, *P. tellieri.*

Proboscis aborted, minute; palpi obliquely upturned, hardly reaching middle of frons, the 2nd joint fringed with hair in front; frons smooth; eyes large, round; antennæ of male typically bipectinate with short fasciculate branches, the apex serrate; thorax clothed with hair and hair-like scales, the pro- and metathorax with spreading crests; tibiæ moderately fringed with hair; the 1st joint of fore tarsus with four long curved claw-like spines on outer side; abdomen with some rough hair at base but without crests. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from the areole; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from just below middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male bipectinate with short fasciculate branches, the apex serrate.

*3296 *c.* **Pseudopseustis tellieri.**

Tæniocampa tellieri, D. Lucas, Bull. Soc. Ent. Fr. 1907, p. 196.

Head and thorax white tinged with flesh-colour; palpi at sides and antennæ brownish; abdomen white tinged with brown. Fore wing white tinged with flesh-pink and irrorated with a few brown

Fig. 241.—*Pseudopseustis tellieri*, ♂. ½.

scales; antemedial line represented by a few brown scales at costa, in and below cell, and at inner margin; a patch of brown scales in end of cell; a slight dark discoidal lunule expanding into a small

spot at lower angle of cell; postmedial line represented by a series of very slight brown points, excurved to vein 4, then incurved; faint traces of a subterminal line represented by some brown scales, excurved below vein 7 and at middle; cilia chequered white and flesh-colour at tips. Hind wing white tinged with brown; an indistinct brown postmedial line excurved at middle; the cilia tinged with flesh-colour; the underside white tinged with flesh-colour.

Hab. Tunis, Kabili, type † ♂ ♀ in Coll. D. Lucas. *Exp.* 36 millim.

3316. *Pseudohadena* **jordana** will form section II. of this genus with minutely serrate antennæ.

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*3298 *a*. **Pseudohadena presbytis.** (Plate CXLVII. fig. 28.)

Pseudohadena presbytis, Püng. ined.

♂. Head and thorax ochreous white faintly tinged with rufous; antennæ fuscous; tarsi faintly tinged with fuscous; abdomen ochreous white irrorated with brown. Fore wing ochreous white faintly tinged with brown and slightly irrorated with fuscous; a sinuous black streak below base of cell; a subbasal black point on costa; antemedial line with small black spot at costa, then indistinct, oblique, waved; claviform slightly defined by black, its lower edge connected with the streak from base; orbicular and reniform with whitish annuli defined by black, the former oblique elliptical, open above, the latter with some fuscous in lower part; a faint brownish medial shade from costa to between the stigmata and slight oblique line from lower angle of cell to inner margin; postmedial line with small black spot at costa, then slight, oblique to vein 6, incurved at discal fold, oblique and sinuous below vein 4; some white points on costa towards apex with slight fuscous streaks between them; subterminal line represented by an oblique series of short black streaks from below apex to vein 5, angled outwards at vein 7, then by faint dentate fuscous marks excurved at middle; a fine waved black terminal line; cilia pale brownish with a creamy white line at base. Hind wing white, the veins and terminal area suffused with brown; cilia pure white; the underside with the costal and terminal areas slightly irrorated with brown, a faint curved postmedial line.

Hab. E. Turkestan, Chamil Hanis, type † ♂ in Coll. Püngeler. *Exp.* 38 millim.

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3319 *a*. **Luperina gueneei.** (Plate CXLVIII. fig. 26.)

Luperina gueneei, Doubl. Entom. Ann. 1864, p. 123.
Luperina baxteri, South, Entom. xlii. p. 289, pl. vii. ff. 3, 4 (1909).

Head and thorax white mixed with rufous; tarsi ringed with white; abdomen ochreous white, the anal tuft more rufous. Fore wing ochreous white suffused with rufous and with slight dark irroration, the postmedial area paler except towards costa; sub-

basal line represented by a dark point on costa; antemedial line blackish defined on inner side by white, oblique and dentate to submedian fold, then angled inwards on vein 1; orbicular and reniform with white annuli defined by blackish, the former small, constricted above, the latter open above and slightly angled inwards on median nervure; postmedial line blackish defined on inner side by white, slightly bent outwards below costa, oblique to vein 6 where it is angled outwards, then dentate and incurved below vein 4, some white points beyond it on costa; subterminal line whitish defined on inner and outer sides by slight dark marks in the interspaces, excurved below vein 7 and at middle; a terminal series of black lunules; cilia intersected with white at the veins. Hind wing pure white; a terminal series of dark striæ from apex to vein 2 and faint shade at vein 1; the underside with dark discoidal spot, the costal area irrorated with brown, a terminal series of dark lunules.

Ab. 1. *baxteri*. Much greyer; head, thorax, and fore wing without any rufous tinge.

Hab. Britain, Coasts of Lancashire and N. Wales, type ♀; Centr. France, Sand Coll. *Exp.* ♂ 38, ♀ 40 millim.

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3322. **Luperina testacea** del. *Luperina gueneei*.

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*3336 *a*. **Luperina acharis**. (Plate CXLVII. fig. 29.)

Luperina acharis, Püng. Iris, xiv. p. 183, pl. ii. f. 5 (1901).

Head, thorax, and abdomen ochreous white slightly mixed with brown; palpi with the 2nd joint fuscous brown at sides. Fore wing ochreous white slightly irrorated with brown; subbasal line very indistinct, double, waved, from costa to vein 1; antemedial line very indistinct, double, waved, oblique, with blackish marks on the outer line at costa, in and below cell; orbicular and reniform faint, whitish, the former very indistinctly defined by brown, round, the latter defined by fuscous on inner side, rather quadrate; a faint dark medial shade from costa to reniform and an oblique minutely waved line from lower angle of cell to inner margin; postmedial line indistinct, blackish defined on outer side by whitish and with double blackish spots at costa, bent outwards below costa, then minutely waved, incurved below vein 4, some white points with fuscous streaks between them beyond it on costa; subterminal line formed of whitish spots faintly defined on inner side by brown, angled outwards at veins 7, 6, 4, 3; a terminal series of slight blackish lunules; cilia with slight fuscous lines at middle and tips. Hind wing whitish suffused with ochreous brown; a terminal series of slight dark lunules from apex to vein 2; cilia white; the underside white, the terminal area slightly tinged with brown, a faint discoidal spot and curved crenulate postmedial line.

Hab. Mongolia, Aksu, type† ♂ ♀ in Coll. Püngeler. *Exp.* ♂ 50, ♀ 52 millim.

Page 515. ***3378 *a*. Oroplexia simulata.**

Neuria simulata, Moore, P. Z. S. 1881, p. 343, pl. 38. f. 1; Hmpsn. Moths Ind. ii. p. 228.

♀. Head, thorax, and abdomen olive-brown. Fore wing olive-brown; subbasal line represented by double dark striæ from costa and cell filled in with reddish; antemedial line double filled in with reddish, excurved; claviform defined by blackish, short and broad; orbicular and reniform with dark centres and reddish annuli defined by black except above and below, the former somewhat oblique, the latter slightly angled inwards on median nervure; medial line represented by a dark striga from costa and oblique sinuous line from lower angle of cell to inner margin; postmedial line double filled in with reddish, bent outward below costa, then minutely waved, excurved to vein 4, then oblique; an indistinct reddish subterminal line defined on inner side by faint dentate dark marks, curved; a terminal series of black points. Hind wing whitish tinged with olive-brown, the terminal area whiter; a fine waved dark terminal line.

Hab. Sikhim. *Exp.* 52 millim.

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***3397 *a*. Eriopus cornuscopiæ.** (Plate CXLVIII. fig. 15.)

Methorasa cornus-copiæ, Holl. Psyche, vi. pl. 21, f. 1 (1893), & vii. p. 7 (1894).

Antennæ of male serrate and fasciculate.

♂. Head, thorax, and abdomen dark reddish brown; basal joint of antennæ whitish at tip; palpi at extremities of 2nd and 3rd joints and lower part of frons whitish; tibiæ and tarsi ringed with white; anal tuft with white mixed. Fore wing red-brown suffused with dark brown; subbasal line represented by a curved white striga from costa; antemedial line indistinct, dark, sinuous, with oblique white striga from costa connected with the orbicular and reniform which are confluent, defined by white and forming a comet-shaped mark, the former narrow and oblique; postmedial line blackish, minutely waved, with white striæ on its outer edge at costa and inner margin, excurved from costa to vein 4, then incurved; traces of a waved dark subterminal line; cilia with a fine white line at base. Hind wing dark reddish brown; a white line at base of cilia; the underside grey-white, the costal area irrorated with brown, a blackish discoidal lunule, curved minutely crenulate postmedial line, and terminal series of striæ.

Hab. Congo, Ogowe R., type † ♂ in Coll. Holland. *Exp.* 26 millim.

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3427. Eriopus *occidens* insert *Erastria* **imparata**, Wlk. xxxiii. 792 (1865), which has precedence; type † ♀ in Mus. Oxon.

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Genus PACHYLEPIS.

Type.

Pachylepis, Feld. Reis. Nov. p. 7 (1874), non descr.; Hmpsn. Moths Ind. ii. p. 337 ..... *dilectissima.*

Proboscis fully developed; palpi upturned, the 2nd joint reaching to middle of frons, broad and rounded in front, hollowed out on inner side, the 3rd joint moderate; frons hollowed out below, produced to a corneous point at middle with a slight ridge below it; eyes large, round; antennæ of male somewhat thickened and almost simple; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with depressed crest; tibiæ smoothly scaled; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 shortly stalked or from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

3452 *a*. Pachylepis dilectissima.

Ariola dilectissima, Wlk. xv. 1751 (1858); Hmpsn. Moths Ind. ii. p. 337.
Pachylepis limacodina, Feld. Reis. Nov. pl. 83. f. 12 (1874).

Head, tegulæ, and metathorax sulphur-yellow, the rest of thorax orange-red; palpi, lower part of frons, and antennæ black-brown; pectus and legs brown mixed with white; abdomen black with white segmental lines, the anal tuft yellowish white, the ventral

Fig. 242.—*Pachylepis dilectissima*, ♂. ½.

surface white with black sublateral spots. Fore wing orange-red; a yellow patch at base of costa; small antemedial spots on costa and inner margin; a medial patch on costa and spots in and below cell and on inner margin; a spot at lower angle of cell; the post-medial part of costa with a series of points and a point on inner margin; the costa with dark marks between the spots except towards base; a terminal series of spots with larger patches at apex and tornus; cilia dark between the spots. Hind wing black-brown, the termen and cilia with patches of white except towards apex. Underside of both wings black-brown; fore wing with patches of white on costa at base and middle, some spots beyond middle and a terminal series; hind wing with some white on costa towards base, a medial patch, two spots in end of cell, and a fascia below the cell.

Hab. N.E. Bengal, 1 ♀; Madras, Nilgiris (*Hampson*), 1 ♂; Ceylon (*Templeton, Green*), 1 ♂, ♀, Nawalapitiya (*Mackwood*),

1 ♂, Periripacheram (*Yerbury*), 1 ♂; Burma, Salween, 1 ♀; Singapore (*Ridley*, *Wood-Jones*), 1 ♂, 3 ♀; Borneo, Sarawak (*Wallace*), 3 ♂ type; Labuan (*Everett*), 1 ♂. *Exp.* 24–32 millim.

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Genus **XANTHOLEPIS**, nov.

Type, *X. dicycla*.

Proboscis fully developed; palpi upturned, the 2nd joint broadly scaled, hollowed out on inner side and reaching to middle of frons, the 3rd moderate and thickly scaled; frons oblique below and produced to a transverse corneous ridge at middle; eyes large, round; antennæ of female almost simple; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with appressed crest; tibiæ moderately fringed with hair; abdomen with dorsal crests on basal segments. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from below upper angle; 7 from angle; 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 shortly stalked; 8 anastomosing with the cell near base only.

3452 *b*. Xantholepis dicycla.

Acontia dicycla, Wlk. xxxv. 1964 (1866); Hmpsn. Moths Ind. ii. p. 338.

♀. Head and thorax sulphur-yellow mixed with cupreous red; palpi, lower part of frons, and antennæ except basal joint red-brown; patagia red; pectus white; tibiæ and tarsi banded red-brown and yellow; abdomen white tinged with red-brown at

Fig. 243.—*Xantholepis dicycla*, ♀. ½.

extremity, the basal crest yellow. Fore wing sulphur-yellow; a small subbasal cupreous red annulus on costa; a curved diffused cupreous red antemedial band with small yellow spots on it at costa and below the cell; reniform a figure-of-eight shaped mark defined by red; postmedial line minutely dentate, angled outwards at discal fold, then inwards to reniform, the area beyond it cupreous red with small yellow spots just beyond it at costa and inner margin, a bifid subapical spot and three spots just before termen between veins 5 and 2; cilia chequered cupreous red and yellow. Hind wing white, the terminal area red-brown; cilia white tinged with rufous at base; the underside white with a sinuous red-brown postmedial line, the area beyond it tinged with rufous.

Hab. N. India (*James*), 1 ♀ type; Burma, Rangoon (*Scott*), 1 ♀. *Exp.* 24 millim.

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Genus PŒCILOGRAMMA.

	Type.
Pœcilogramma, Butl. P. Z. S. 1892, p. 126	*picata*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head and rather broadly fringed with scales, the 3rd moderate; frons smooth; eyes large, round; antennæ of male with long cilia; thorax clothed chiefly with scales, the pro- and metathorax with spreading crests formed of long spatulate scales; mid tibiæ fringed with very long hair on outer side, the hind tibiæ moderately fringed with hair; abdomen with dorsal crest at base only. Fore wing rather narrow and elongate, the apex rather produced and acute, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from upper angle; 9 from 10 anastomosing with 8 to form the areole; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

Sect. I. Antennæ of male with the shaft excised just before middle, with tuft of hair from upperside just before the excision and slight thickening beyond it; fore coxæ with tufts of long hair, the femora with thick tufts of hair above, the tibiæ with tuft of long hair on outer side at extremity; fore wing on underside with rough yellowish scales at base on costa and below cell; hind wing with rough yellowish scales on base of costa and on inner area.

3457 *a*. Pœcilogramma albiscripta.

Zurobata albiscripta, Hmpsn. J. Bomb. Nat. Hist. Soc. xi. p. 449 (1897).
Agabra spotha, Swinh. Cat. Het. Mus. Oxon. ii. p. 37, pl. 1. f. 16 (1900).

Head and tegulæ rufous mixed with yellowish; thorax white mixed with brown; abdomen white tinged with brown; pectus, legs, and ventral surface of abdomen yellowish white, the fore legs

Fig. 244.—*Pœcilogramma albiscripta*, ♂. ½.

brown in front with the tuft of hair on femora black, the tarsi blackish ringed with white. Fore wing olive-brown with slight dark irroration; a white bar at base followed by a small black spot in cell defined by white; antemedial line white, forming a diffused patch in cell, angled outwards on median nervure and oblique

towards costa and inner margin, a slight white streak before it on vein 1; reniform defined by white on outer side and below, a white streak on vein 6 from its extremity to termen; postmedial line white, oblique from costa to vein 6 where it is angled outwards, below vein 4 bent inwards to lower edge of reniform, then obliquely excurved to inner margin, some white points beyond it on costa; subterminal line represented by two obliquely placed white streaks below apex, then oblique striæ below veins 7 and 6, then slight, dark, excurved at middle, and with wedge-shaped white spot beyond it in submedian fold, almost met by a short streak from postmedial line; a series of white striæ just before termen; cilia with a fine pale line at base and some white at apex. Hind wing greyish tinged with red-brown; a fine dark terminal line; the underside white, the costal and terminal areas irrorated with brown, a brown discoidal spot and diffused curved postmedial and subterminal lines; the rough scales on both wings yellowish.

Hab. Assam, Khásis, 2 ♀ type; Bombay, Kanara, Karwar (*Bell*), 1 ♂, 1 ♀; Madras, Nilgiris, type † *spotha* in Mus. Oxon.; Ceylon, Maskeliya (*de Mowbray*), 1 ♂. *Exp.* 24–30 millim.

Sect. II. Antennæ, fore legs, and wings of male normal.

3457 *b*. Pœcilogramma picata.

Pœcilogramma picatum, Butl. P. Z. S. 1892, p. 126, pl. vi. f. 4.

♂. Head and thorax dark brown mixed with white, the prothoracic crest with some rufous; tibiæ and tarsi banded brown and

Fig. 245.—*Pœcilogramma picata*, ♂. ⅔.

white; abdomen whitish irrorated with brown. Fore wing dark brown with black streaks in and below cell and in interspaces of terminal area; subbasal line yellowish white, dilated into a spot at costa, then sinuous to base of inner margin, connected by an oblique white mark in cell with the yellowish white antemedial band which forms a costal patch on costal area, then oblique to inner margin, with a white striga before it from costa, and some brown striæ on it representing the antemedial line, the inner margin with white fascia irrorated with brown from it to termen; reniform a small figure-of-eight shaped white mark with black spot in its lower part; postmedial line white defined on inner side by black, inwardly oblique from costa, bent outwards below costa, slightly incurved at discal fold, bent inwards at vein 3 to lower edge of

reniform and again bent outwards at vein 1, some white points beyond it on costa; subterminal line with oblique white bar from apex almost connected with the angle of postmedial line, slightly angled outwards at vein 7, excurved at middle and bent outwards to tornus; the veins of postmedial and terminal areas with slight pale streaks; a series of white striæ just before termen and small quadrate spot below vein 4; a terminal series of black striæ; cilia brown mixed with white. Hind wing brown, the cilia with fine pale line at base and whitish tips; the underside whitish thickly irrorated with brown, the terminal area suffused with brown, a brown discoidal lunule and diffused curved postmedial line.

Hab. Borneo, Sandakan (*Pryer*), 1 ♂ type. *Exp.* 24 millim.

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3478. **Chytonix** *chlorophila* insert *Acontia* **splendens**, Druce, P. Z. S. 1890, p. 516; id. Biol. Centr.-Amer., Het. ii. p. 492, pl. 95. f. 2, which has precedence.—Panama.

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*3478 *a*. **Chytonix haba.** (Plate CXLVII. fig. 30.)

Chamyris haba, Dogn. Ann. Soc. Ent. Belg. xli. p. 414 (1897).

♀. Head and thorax white mixed with some brown, the tegulæ with some black scales at tips; palpi and legs mostly brown, the tarsi black ringed with white; abdomen white mixed with red-brown. Fore wing silvery white tinged with green and slightly irrorated with black-brown; black spots near base below costa and cell and above inner margin; an obsolescent curved blackish subbasal line from costa to vein 1; the costal edge beyond it brown; antemedial line indistinct, double, oblique from costa to median nervure, the outer line with black spot on costa; some pale red suffusion in end of cell; reniform represented by a blackish discoidal bar and blackish spot before its upper part; a black spot on middle of costa; postmedial line with black spot on costa, then indistinctly double, bent outwards below costa, then defined on inner side by black points, incurved below vein 4, the costa beyond it with white points with short black streaks between them; subterminal line white slightly defined on inner side by black and with rufous suffusion before it from vein 6 to inner margin extending to the postmedial line, angled outwards at veins 7, 4, 3, the area beyond it with patches of brown suffusion at middle and above tornus; a terminal series of black lunules defined on inner side by white; cilia rufous mixed with brown. Hind wing whitish almost wholly suffused with brown; a curved dark postmedial line; a lunulate dark terminal line with series of white lunules before it; cilia tinged with rufous and mixed with brown; the underside white irrorated with black-brown especially on apical area, the costal area tinged with rufous, a black discoidal lunule, curved lunulate postmedial line, and waved terminal line.

Hab. Ecuador, Loja, type † ♀ in Coll. Dognin. *Exp.* 38 millim.

Page 613. 3490 *a*. **Chytonix segregata.**

Miana segregata, Butl. A. M. N. H. (5) i. p. 85 (1878); id. Ill. Het. B.M. ii. p. 25, pl. 29. f. 5; Staud. Cat. Lep. pal. p. 164.
Telesilla placens, Staud. Stett. ent. Zeit. 1888, p. 259; id. Rom. Mém. vi. p. 444, pl. 10. f. 5.

Head, thorax, and abdomen red-brown mixed with grey, the last with pale segmental lines and the dorsal crests blackish, the fore tarsi blackish ringed with white. Fore wing red-brown mixed with grey, the medial area darker brown from cell to inner margin; subbasal line brown defined on outer side by grey, curved, from costa to submedian fold; antemedial line brown defined on inner side by grey, angled outwards below costa, on median nervure and vein 1 and oblique below the cell; reniform with slight grey annulus, elliptical; postmedial line brown defined on outer side by grey, bent outwards below costa, oblique to vein 6, bent inwards to discal fold where there is a dark spot beyond it produced at extremities, again bent inwards below vein 4 and sinuous to inner margin; the apical area dark brown with some white points on costa and crossed by the whitish subterminal line, incurved below costa and with small black spot before it at vein 6, then bent inwards to discal fold, excurved at middle and sinuous to inner margin; a terminal series of slight dark striæ; cilia with fine whitish lines at base and near tips. Hind wing reddish brown; a fine dark terminal line; cilia with fine whitish lines at base and near tips; the underside grey suffused with reddish brown, a discoidal spot and slight postmedial line excurved and waved below costa.

Hab. E. Siberia, Ussuri; Japan, Hakodaté (*Andrews*), 2 ♀, Oiwake (*Pryer*), 1 ♀, Tokio (*Maries*), 3 ♂, 3 ♀, Yokohama (*Jonas*, *Lewis*, *Pryer*, *Manley*), 4 ♂, 3 ♀ type; Corea, Gensan (*Leech*, *Ito*), 1 ♂, 1 ♀; C. China, Shanghai (*Pryer*), 2 ♂, Ichang (*Mrs. Pratt*), 1 ♂, 1 ♀; W. China, Moupin (*Kricheldorff*), 1 ♀. *Exp.* 28–38 millim.

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3509. **Bryophila modesta** del. *B. confucii.*

Page 645. *3533 *a*. **Bryophila simulatricula.**

Bryophila simulatricula, Guen. Noct. i. p. 26, pl. 3. f. 4 (1852); Oberth. Ét. Lep. Comp. i. p. 59, pl. iv. f. 52; Staud. Cat. Lep. pal. p. 166.

Head and thorax black mixed with grey; abdomen grey suffused with fuscous, the crests blackish; palpi whitish with some black at sides; pectus, legs, and ventral surface of abdomen whitish mixed with black, the tarsi black ringed with white. Fore wing grey very thickly irrorated with black and faintly tinged with brown; traces of a sinuous black subbasal line from costa to submedian fold; antemedial line black, oblique, slightly waved, a black streak from it to postmedial line above vein 1; orbicular and reniform

hardly traceable; postmedial line black, bent outwards below costa, oblique to vein 6, slightly incurved at discal fold and strongly below vein 4; subterminal line hardly traceable, pale, incurved at discal fold where there is some blackish beyond it and incurved below vein 3; a terminal series of slight black points; cilia slightly intersected with whitish. Hind wing white faintly tinged with brown, the veins brown, the costal and terminal areas irrorated with fuscous; a fine black terminal line; cilia white with some fuscous near base; the underside white, a black discoidal spot and curved slightly waved subterminal line.

Hab. Switzerland, Valais in Coll. Püngeler; Italy. *Exp.* 30 millim.

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3538. **Bryophila palliola** del. *B. simulatricula.*

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3542. **Cerma marina.** (Plate CXLVII. fig. 31.)

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3553. **Pariambia** *aprepes* insert *Acontia* **pulla**, Swinh. P. Z. S. 1885, p. 456, pl. 27. f. 15; Hmpsn. Moths Ind. ii. p. 331, which has priority.

Hab. Punjab, Simla (*Harford*), 5 ♀, Campbellpur (*Verbury*), 1 ♀, Dharmsála (*Hocking*), 2 ♀, Cawnpore (*Betton*), 2 ♀; Bengal, Calcutta, 1 ♀; Bombay, Deesa (*Nurse*), 1 ♀, Poona (*Swinhoe*), 1 ♀ type; Ceylon, Willawaya (*Alston*), 1 ♂ type *aprepes*.

Page 661. 3553 *a*. **Pariambia unduligera.**

Erastria unduligera, Butl. Ill. Het. B. M. vii. p. 63, pl. 129. f. 9 (1889); Hmpsn. Moths Ind. ii. p. 328.

Head and thorax dark brown mixed with some silvery grey; palpi yellow with black marks on 2nd and 3rd joints behind; lower part of frons and basal joint of antennæ yellow; metathorax pure white; pectus and legs yellow tinged with brown, the fore tibiæ and the tarsi black ringed with yellow; abdomen fulvous yellow suffused with brown. Fore wing dark brown suffused with silvery purple; subbasal line represented by a black striga from costa; antemedial line double, black, waved; orbicular and reniform incompletely defined by black and with some fulvous yellow scales at sides, the former round, the latter constricted at middle; medial line blackish, excurved below costa, then waved; postmedial line double, black filled in with yellowish and with some yellowish beyond it towards inner margin, bent outwards below costa, incurved at discal fold, incurved and slightly waved below vein 4, some white points beyond it on costa; subterminal line diffused,

black, excurved below vein 7 and at middle, then incurved; a terminal series of black points. Hind wing nearly uniformly suffused with cupreous brown; the underside whitish irrorated and suffused with fuscous brown, a dark discoidal spot and indistinct curved postmedial line.

Hab. Punjab, Dharmsála (*Hocking*), 1 ♀ type; Madras, Belgaum (*Watson*), 1 ♂. *Exp.* 20–22 millim.

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*3638 *a*. **Acronycta phædra.** (Plate CXLVII. fig. 32.)

Acronycta phædra, Püng. ined.

♀. Head, thorax, and abdomen grey-white mixed with black; palpi black at sides except extremities of 2nd and 3rd joints; frons with black marks at sides; patagia with black streaks on outer edge; tibiæ and tarsi banded with black. Fore wing grey-white thickly irrorated with black, the base of inner margin creamy white; a black streak below base of cell dilated into a wedge-shaped patch before antemedial line; subbasal line represented by a black striga from costa; antemedial line double, minutely waved, oblique, bent inwards to inner margin above which there is an oblique black streak before it, a black streak beyond it above vein 1; orbicular and reniform creamy white defined by black and with some black scales in centres, the former round; an oblique black bar from costa to reniform; postmedial line double at costa, then black prominently defined by white on inner side, bent outwards below costa, then dentate, excurved to vein 4, then incurved and bidentate in submedian interspace, a black streak from it to termen in submedian fold with some black above and below it, some pale points beyond it on costa; a slight waved whitish subterminal line from costa to discal fold; a terminal series of black striæ defined on inner side by white; cilia white intersected with black and with black line near base. Hind wing white slightly tinged with fuscous, especially on terminal area; the termen and tips of cilia with blackish points except towards tornus; the underside white, the costal area irrorated with fuscous, a black discoidal spot and indistinct postmedial line waved to vein 4, then oblique.

Hab. E. Siberia, Ussuri, Kusakewitsch (*Korb*), type † ♀ in Coll. Püngeler. *Exp.* 38 millim.

Page 93. 3676. **Acronycta rumicis** insert

Ab. *suhriana*, Gilmer, Ent. Rec. xix. p. 91 (1907).

Fore wing with the basal and terminal areas blackish, the medial area pale.

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*3725 *a*. **Acronycta tonitra.** (Plate CXLVIII. fig. 31.)

Acronycta tonitra, Smith, J. N. Y. Ent. Soc. xvi. p. 83 (1908).

Head, thorax, and abdomen smoky grey-brown; gulæ white; pectus whitish; legs more or less smoky grey-brown. Fore wing smoky grey-brown; antemedial line very indistinct, with an oblique shade from costa, oblique, slightly angled inwards below the cell where there are traces of a black streak from it to base, sometimes defined on outer side by a few white scales; orbicular defined by black, small, elliptical; reniform small, elliptical, more or less obscured by the dark medial shade which extends from costa to reniform and is rarely traceable below the cell; postmedial line black defined on inner side by white suffusion, strongly dentate, excurved from costa to vein 4, then incurved, with short black streaks beyond it at discal and submedian folds, the latter extending to just before the line; cilia chequered grey and fuscous, white at tips. Hind wing whitish, the terminal area slightly tinged with brown; the underside with fuscous discoidal spot and postmedial line.

Hab. U.S.A., Missouri, St. Louis. *Exp.* 35–41 millim. This species is unknown to me; figured from a drawing from type in Coll. J. B. Smith.

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3802 *a*. **Delta phœnicraspis**, n. sp. (Plate CXLVIII. fig. 1.)

♀. Head and thorax ochreous white mostly suffused with crimson; tegulæ pale at base; patagia pale at outer side and with dark streak near upper edge; legs with dark streaks, the spurs banded with black; abdomen ochreous white tinged with crimson except at base. Fore wing ochreous, the costal area suffused with crimson to near apex, the medial part of inner margin tinged with crimson; a fine black streak in basal half of submedian fold followed by two slight oblique streaks below vein 2; the veins streaked with black and defined by white except on costal area; antemedial line represented by an elongate tooth above inner margin with a wedge-shaped black mark before it; orbicular small with black centre and white annulus, its outer edge produced to an acute angle; reniform whitish with its centre defined by black, a narrow bar with its lower extremity produced to a hook, the cell before and between them black-brown; a chocolate-brown patch beyond lower angle of cell; postmedial line obsolescent, bent outwards below costa, oblique and reduced to points on the veins below vein 4, some white points beyond it on costa; subterminal line white, dentate to termen towards apex and on veins 4, 3, then running inwards as a curved streak to below end of cell, the area beyond it black-brown to vein 2; cilia ochreous suffused with red-brown and blackish except towards tornus and intersected by pale streaks on the veins. Hind wing ochreous white, the veins and terminal area suffused with brown; cilia ochreous white tinged with reddish towards

apex ; the underside ochreous white, the apical area tinged with crimson, a terminal series of blackish points from apex to vein 2.

Hab. N.W. Rhodesia, Kapopo (*Neave*), 1 ♀ type. *Exp.* 40 millim.

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3835. **Oxycnemis adusta.** (Plate CXLIX. fig. 1.) Figured from drawing from type in Coll. J. B. Smith.

Page 274. Under **Antha** insert *Anodontodes* Hmpsn. Trans. Ent. Soc. 1895, p. 302. Type *rotunda*.

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*3887 *a*. **Antha rotunda.** (Plate CXLVIII. fig. 2.)

Anodontodes rotunda, Hmpsn. Trans. Ent. Soc. 1895, p. 302 ; id. Moths Ind. iv. p. 523.

♀. Head, thorax, and abdomen deep rufous slightly mixed with ochreous ; patagia ochreous edged above with rufous ; pectus ochreous ; legs dark brown, the tarsi ringed with ochreous. Fore wing ochreous tinged with rufous, the costa, inner margin except at base and termen rufous ; traces of an oblique sinuous subbasal line ; antemedial line very indistinct, oblique from costa to submedian fold, then inwardly oblique, an olive-brown patch before it below the cell ; claviform and orbicular absent ; reniform a pale lunule with brown line in centre, slight olive-brown marks before its upper and lower parts and a diffused patch beyond it ; a slight oblique rufous line from lower angle of cell to inner margin to which it is bent inwards ; postmedial line double, very strongly excurved, the inner line punctiform ; subterminal line deep chocolate-brown, curved, with slight dentate marks at the veins where there are grey and blackish marks beyond it ; a terminal series of crimson striæ ; cilia olive-brown and ochreous with a black line through them. Hind wing ochreous suffused with dark brown, traces of a curved postmedial line and diffused subterminal band ; the underside ochreous irrorated with brown, a brown discoidal spot, double curved postmedial line, and terminal series of lunules.

Hab. Sikhim (*Elwes*), type † ♀ in Coll. Rothschild. *Exp.* 46 millim.

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4033. **Omphaletis passalota.**

Prometopus passalota, Turner, P. Linn. Soc. N.S.W. xxxiv. p. 342 (1909).

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4111. **Hypoperigea hæmorrhanta**, Turner, P. Linn. Soc. N.S.W. xxxiv. p. 342 (1909).

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4115 *a*. **Dysmilichia purpurascens**, n. sp. (Plate CXLVIII. fig. 3.)

♀. Head and thorax deep purplish red mixed with some greyish ; pectus, legs, and abdomen pale reddish brown. Fore wing deep purplish red mixed with some grey especially on terminal area ; antemedial line indistinct, double, oblique, waved ; claviform finely

defined by white; orbicular and reniform with fine white annuli, the former round, the latter oblique and somewhat constricted at middle; postmedial line double filled in with grey and with dark points on its outer edge, oblique below vein 4; faint traces of a pale subterminal line excurved at middle; cilia darker. Hind wing grey suffused with reddish brown; cilia paler; the underside whitish, the costal and terminal areas slightly irrorated with brown.

Hab. Transvaal, Pretoria (*Janse*), 1 ♀ type. *Exp.* 30 millim.

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4117 *a*. **Proxenus pectinifera.** (Plate CXLVIII. fig. 23.)

Proxenus pectinifer, Auriv. ined.

Antennæ of male bipectinate with moderate branches.

♂. Head, thorax, and abdomen grey mixed with dark brown; tarsi blackish ringed with white. Fore wing grey thickly irrorated with dark brown and with a cupreous gloss; subbasal line dark, curved, from costa to submedian fold; antemedial line dark, oblique, sinuous; a slight dark discoidal striga with traces of a line from it to inner margin at postmedial line, which is dark slightly defined on outer side by white, excurved from below costa to vein 4; then oblique, sinuous, some dark points beyond it on costa; subterminal line indistinct, whitish defined on inner side by brown, slightly angled outwards at vein 7; a terminal series of black striæ and fine yellowish line at base of cilia. Hind wing whitish suffused with brown; a terminal series of dark striæ and yellowish line at base of cilia; the underside white tinged and irrorated with brown, a dark discoidal spot and rather diffused curved postmedial line.

Hab. Germ. E. Africa, Kilima'njaro (*Sjöstedt*), 1 ♂. *Exp.* 24 millim.

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4127 *a*. **Proxenus camptogramma**, n. sp. (Plate CXLVIII. fig. 13.)

♂. Head, thorax, and abdomen pale grey-brown with a slight cupreous tinge; palpi fuscous at sides, whitish at tips. Fore wing pale grey-brown with a cupreous tinge; the costal edge blackish at base; a blackish subbasal line from costa to submedian fold; antemedial line oblique, slightly bent inwards to inner margin; a black point in middle of cell; reniform defined by black, a blackish medial line, oblique from costa to reniform, then inwardly oblique; postmedial line black, excurved from below costa to vein 4, then oblique and minutely waved; subterminal line blackish, slightly excurved below vein 7 and at middle; a terminal series of blackish striæ; cilia tinged with fuscous. Hind wing whitish tinged with cupreous brown, the cilia white at tips; the underside white, the costal area irrorated with brown, a black discoidal spot and postmedial line incurved below vein 2.

Hab. N.W. Rhodesia, Alala Plateau, Ndola Distr. (*Neave*), 1 ♂ type. *Exp.* 30 millim.

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4134. **Galgula partita** insert (syn.) *Rivula mandane*, Druce, Biol. Centr.-Am., Het. i. p. 444, pl. 36. f. 4 (1891).

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4136. **Micrathetis canifimbria** insert (syn.) *Thalpochares novaræ*, Feld. Reis. Nov. pl. 108. f. 18 (1874).

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4137 *a*. **Micrathetis costiplaga.** (Plate CXLVIII. fig. 16.)

Caradrina costiplaga, Smith, J. N.Y. Ent. Soc. xvi. p. 92 (1908).

Head, thorax, and abdomen pale ochreous slightly tinged with rufous; palpi brown at sides; antennæ brown; legs tinged with brown. Fore wing pale ochreous slightly tinged with rufous; the costal edge dark towards base; traces of a sinuous antemedial line with black point at costa; orbicular represented by a slight brown striga, the reniform by a triangular black patch enclosing a patch of the ground-colour on costa, its outer arm forming a small black spot on costa at origin of postmedial line which is slightly bent outwards below costa, then reduced to slight black points connected by traces of a dentate line with a series of points beyond them excurved to vein 4, then oblique; subterminal line represented by a faint rufous shade on its inner side, slightly excurved below vein 7, the terminal area pale ochreous; a lunulate black terminal line; cilia ochreous white mixed with fuscous. Hind wing ochreous white slightly tinged with brown; a faint dark discoidal lunule; the cilia and underside paler.

Hab. U.S.A., Arizona, Sta. Catalina Mts., 1 ♂, Yavapai Co., 1 ♀ cotype. *Exp.* 24 millim.

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Genus **NOLASODES**, nov.

Type, *N. atrisignata*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head and smoothly scaled, the 3rd rather long; frons smooth, with tuft of hair; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales, the prothorax without crest, the metathorax with depressed crest; tibiæ slightly fringed with hair; abdomen with dorsal crest at base only. Fore wing with the apex rounded, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6, 7 from upper angle; 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 from angle of cell; 5 obsolescent from middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4152 *a*. **Nolasodes atrisignata**, n. sp. (Plate CXLVIII. fig. 24.)

♂. Head and thorax white mixed with rufous; palpi blackish except at extremities of 2nd and 3rd joints; antennæ brownish; tarsi brownish with pale rings; abdomen yellowish tinged with rufous. Fore wing white tinged with rufous and irrorated with a

few brown scales, especially in and below end of cell; the costa black-brown towards base, expanding into an antemedial patch; a minute subbasal black streak below costa; traces of a double waved brown antemedial line; two small spots of raised black scales on discocellulars with a point below them in submedian fold and brown mark above them on costa; postmedial line indistinct, double, brown, bent outwards below costa, incurved at discal fold, incurved and minutely waved below vein 4, some black and white points beyond it on costa; subterminal line indistinct, pale, slightly defined on inner side by brown and with minute black streaks before it from below costa to vein 3, excurved below vein 7 and at middle; a terminal series of small black lunules; cilia yellowish suffused with brown. Hind wing pale yellowish tinged with rufous especially on terminal area; an indistinct oblique diffused brown postmedial line and fine brown terminal line: cilia yellowish, tinged with rufous from apex to vein 2; the underside yellowish, the costal area suffused with red-brown.

Hab. Fr. Guiana, St. Laurent Maroni (*Le Moult*), 1 ♂ type. *Exp.* 22 millim.

Page 483. 4184 *a*. **Monodes bogotana.**

Erastria bogotana, Feld. Reis. Nov. pl. 108. f. 21 (1874).

Head brown mixed with whitish; thorax yellowish white, the tegulæ black except towards tips; pectus, legs, and abdomen whitish irrorated with brown. Fore wing yellowish white irrorated with dark brown, the terminal area darker; subbasal line represented by a black striga from costa and line from cell to vein 1; antemedial line indistinctly double, oblique from costa to median nervure, then minutely waved; orbicular and reniform slightly defined by black except above and with some brown in centres, the former rather oblique elliptical, a blackish patch between them in cell; a slight sinuous medial line from lower angle of cell to inner margin; postmedial line indistinctly double, excurved from below costa to vein 4, then incurved and again excurved above inner margin; an oblique wedge-shaped pale patch from apex to the postmedial line, some whitish points before it on costa; traces of a minutely waved whitish subterminal line from the pale patch to inner margin. Hind wing white tinged with brown; a fine dark terminal line; the underside white irrorated with brown, a black discoidal point and traces of a curved postmedial line.

Hab. Colombia, Bogota, type † ♀ in Coll. Rothschild; Chili, Coquimbo (*J. J. Walker*), 1 ♂, Quillota (*Paulson*), 1 ♀. *Exp.* 22–28 millim.

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4191. **Monodes** *hemipolia* insert *Eustrotia* **pulida**, Dogn. Ann. Soc. Ent. Belg. xli. p. 414 (1897), which has precedence.

Ecuador, Loja, type † ♀ in Coll. Dognin.

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4264 *a*. **Procrateria melanoleuca**, n. sp. (Plate CXLVIII. fig. 4.)

♀. Head white; palpi brown, blackish at tips; frons and a bar between antennæ black; antennæ brownish; tegulæ reddish brown; thorax white with a black band in front; pectus, legs, and abdomen white tinged with reddish brown, the fore tarsi blackish with pale rings. Fore wing white slightly tinged with brown, the apical area suffused with reddish brown; some black at base of costa followed by a subbasal black striga, then a black band from costa to median nervure constricted at middle; antemedial line black defined on inner side by white, slightly angled inwards below costa, then obliquely excurved to vein 1 where it is joined by an excurved black line defined on outer side by white from above end of cell, forming a patch at costa with a white spot on it and a patch at junction of the two lines; orbicular black with white annulus, small, round; reniform and postmedial line obsolete; some black points on postmedial part of costa and a slight black mark on inner margin; subterminal line pure white defined on inner side by black striæ and points which are slight towards costa, and on outer side strongly by black from costa to termen above vein 5, sinuous, bent outwards nearly to termen between veins 5 and 3, where there is some white beyond it; some black points on middle of termen and a lunule above tornus; cilia brownish on apical half, white on tornal half. Hind wing white, the termen tinged with brown from apex to vein 3; a terminal series of brown striæ; cilia with brownish spots towards apex; the underside with the costal area and terminal area to vein 3 tinged and irrorated with reddish brown, a dark discoidal spot.

Hab. Peru, Pozuzo, 1 ♀ type. *Exp.* 32 millim.

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4293. **Namangana morsa**. (Plate CXLVIII, fig. 29.) Figured from drawing from type in Coll. J. B. Smith.

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Genus **PHOBOLOSIA**.

	Type.
Phobolosia, Dyar, Proc. Ent. Soc. Wash. x. p. 52 (1908)	*reincarnata*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching to vertex of head and fringed with long hair in front coming to a point above, the 3rd joint short and fringed with hair; frons smooth with tuft of hair; eyes large, round; antennæ of female minutely serrate; thorax clothed almost entirely with scales, the metathorax (?) with spreading crest; tibiæ slightly fringed with hair; abdomen without crests. Fore wing with the apex somewhat produced, the termen evenly curved and not crenulate; veins 3 and 5 from near angle of cell; 6 from below upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with veins 3, 4 shortly stalked; 5 obsolescent from middle of disco-cellulars; 6, 7 shortly stalked; 8 anastomosing with the cell to near middle.

*4304 *a*. Phobolosia reincarnata.

Phobolosia reincarnata, Dyar, Proc. Ent. Soc. Wash. x. p. 52 (1908).

♀. Head, thorax, and abdomen brownish ochreous mixed with whitish; tarsi fuscous with pale rings. Fore wing brownish ochreous mixed with whitish and slightly irrorated with fuscous; small subbasal blackish marks below costa and cell; antemedial line whitish, angled outwards below costa, then almost straight and erect, a blackish mark before it in and below cell; a large, somewhat quadrate blackish patch in and below end of cell before the

Fig. 246.—*Phobolosia reincarnata*, ♀. ⅔.

slight black discoidal lunule defined on outer side by whitish; postmedial line defined on each side by whitish, blackish and strongly bent outwards below costa, then brownish, minutely waved and incurved below vein 4, some oblique white striæ beyond it from costa with brown marks between them; subterminal line whitish defined on inner side by ochreous brown, minutely waved; the interspaces of terminal area with slight silvery patches; a terminal series of dark points; cilia whitish at base, brownish at tips. Hind wing whitish tinged and irrorated with brown; a fine dark terminal line; the underside with slight brown discoidal spot and postmedial line excurved to vein 5, then oblique and with blackish point at costa.

Hab. U.S.A., California, San Diego (*Field*), type † ♀ in U.S. Nat. Mus. *Exp.* 22 millim.

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4337. **Hydrœcia puengeleri**, Turati, Nat. Sicil. xxi. p. 98, pl. i. ff. 17, 18 (1909).

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4385. **Papaipema latia.** (Plate CXLVIII. fig. 32.) Figured from drawing from specimen in Coll. J. B. Smith.

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*4433 *a*. Stibadium resoluta. (Plate CXLVIII. fig. 20.)

Plagiomimicus resoluta, Dyar, Proc. Ent. Soc. Wash. xi. p. 26 (1909).

♂. Head, thorax, and abdomen brownish grey. Fore wing brownish grey with a metallic gloss; antemedial line bronze-brown,

fine, angled outwards in submedian fold; orbicular and reniform defined by brown, large, somewhat paler than the ground-colour, the former round; a slight oblique line from lower angle of cell to inner margin; postmedial line bronze-brown, angled outwards at vein 7, then oblique and defined on outer side by a pale shade arising from apex; subterminal line fine, pale, sinuous; a fine brown terminal line. Hind wing pale suffused with brown, the veins darker; a diffused pale curved postmedial band; a fine brown terminal line.

Hab. Mexico, Guadalajara, Tehuacan (*Müller*). *Exp.* 40 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

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*4438 *a*. **Stibadium psamathochroma.** (Plate CXLVIII. fig. 21.)

Stibadium psamathochromum, Dyar, Proc. Ent. Soc. Wash. xi. p. 22 (1909).

Head, thorax, and abdomen pale grey. Fore wing pale grey; antemedial line very indistinct, sinuous; orbicular and reniform faintly defined, the former round; postmedial line more distinct, brown, angled outwards at vein 7, then oblique; subterminal line represented by a pale shade, somewhat dentate at veins 4, 3. Hind wing whitish, the terminal area suffused with brown.

Hab. Mexico, Tehuacan (*Müller*). *Exp.* 30 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

*4439 *a*. **Stibadium crenulosa.** (Plate CXLVIII. fig. 22.)

Stibadium crenulosum, Dyar, Proc. Ent. Soc. Wash. xi. p. 23 (1909).

Head, thorax, and abdomen ochreous white tinged with brown. Fore wing fuscous brown, the extreme base and postmedial area pale reddish brown; antemedial line obsolete from costa to median nervure, then indistinct, dentate; orbicular absent; reniform whitish with brown lunule in centre, small; postmedial line double filled in with whitish, minutely dentate, excurved from costa to vein 4, then oblique. Hind wing whitish, the terminal area tinged with brown from apex to vein 2; cilia pale.

Hab. Mexico, Tehuacan (*Müller*). *Exp.* 26 millim. This species is unknown to me; figured from a drawing from type in U.S. Nat. Mus.

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4496. **Meristis trigrammica** insert var. *erubescens*, Turati, Nat. Sicil. xxi. p. 103, pl. v. f. 11 (1909).

A brown form with the medial line of fore wing present.—Sicily.

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Genus **GONELYDNA**, nov.

Type, *G. acutangula*.

Proboscis fully developed; palpi upturned, the 2nd joint reaching about to vertex of head and moderately scaled, the 3rd short; frons smooth; eyes large, round; antennæ of male ciliated; thorax clothed almost entirely with scales and without crests; tibiæ slightly fringed with hair; abdomen without crests. Fore wing broad, the termen slightly excised from apex to vein 4 where it is angled, then oblique; veins 3 and 5 from near angle of cell; 6 from upper angle; 7, 8, 9, 10 stalked; 11 from cell. Hind wing with the tornus truncate; veins 3, 4 shortly stalked: 5 obsolescent from just below middle of discocellulars; 6, 7 from upper angle; 8 anastomosing with the cell near base only.

4504 *a*. **Gonelydna acutangula**, n. sp.

♂. Head and thorax red-brown, the scales tipped with grey; abdomen red-brown tinged with grey, the ventral surface greyer. Fore wing red-brown tinged with grey, the veins slightly streaked with grey; subbasal line grey, straight, from costa to vein 1; antemedial line ochreous grey defined on outer side by chocolate-brown, incurved; orbicular a small oblique pure white mark; reniform fuscous brown slightly defined by ochreous grey, its outer side excised near upper extremity; postmedial line ochreous grey defined on inner side by chocolate-brown, very oblique from costa

Fig. 247.—*Gonelydna acutangula*, ♂. ½.

to vein 6 where it is acutely angled, then obliquely incurved; some ochreous points beyond it on costa and an oblique streak from apex to the angle at vein 6; subterminal line ochreous grey defined on outer side by brown, from the oblique streak to tornus, nearly straight; a terminal series of black and ochreous points; cilia with a fine ochreous line at base. Hind wing dark reddish brown, an oblique ochreous line from vein 4 to termen at submedian fold; cilia with a fine ochreous line at base; the underside grey-brown irrorated with brown, a terminal series of black points.

Hab. Gold Coast, Ashanti, Obuassi (*Bergman*), 1 ♂ type. *Exp.* 36 millim.

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4514. **Elydna** *stellata* insert *Cosmia* **bipuncta**, Snell. Veth's Midden-Sumatra, Lep. p. 43 (1880), which has priority.

Sumatra; Java

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4583. **Lythrodes venata.** (Plate CXLVIII. fig. 19.) Figured from drawing from co-type in U.S. Nat. Mus.

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4584. **Lythrodes semiluna.** (Plate CXLIX. fig. 2.) Figured from drawing from type in Coll. J. B. Smith.

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*4776 *a*. **Conicofrontia mesophæa.** (Plate CXLVIII. fig. 25.)

Conicofrontia mesophæa, Auriv. ined.

Fore wing with the apex rounded.

♀. Head and thorax ochreous white tinged with rufous; palpi and tarsi at extremities brownish; abdomen ochreous white suffused with brown. Fore wing ochreous white tinged with rufous; a diffused red-brown fascia along median nervure which is whitish towards extremity; a black discoidal point; postmedial line represented by a series of slight dark points on the veins and in the interspaces, oblique below vein 4, the point in discal fold more prominent; traces of a brown subterminal shade, more prominent between veins 6 and 4; a terminal series of small black lunules; cilia yellowish at base, the tips brown with a fine whitish line near tips. Hind wing ochreous white with traces of an obliquely curved postmedial series of points on the veins and terminal series of striæ; the underside with the costal and terminal areas slightly irrorated with brown.

Hab. Germ. E. Africa. Kilima'njaro (*Sjöstedt*), type † in Mus. Stockholm. *Exp.* 40 millim.

Species omitted.

Acronicta schlumbergeri, Schultz, Ent. Zeit. Güben. xx. p. 73 (1906). ? = *A. megacephala* ..... Silesia.

Acronycta bellula, Alph. Iris, viii. p. 189 (1895); Staud. Cat. Lep. pal. p. 132 ..... E. Siberia.

„ *elæagni*, Alph. Stett. ent. Zeit. 1887, p. 167; id. Rom. Mém. v. p. 126, pl. 6. f. 2; Staud. Cat. Lep. pal. p. 131. ? = *A. tridens* ..... W. Turkestan.

„ *gasta*, Streck. Lep. Rhop. & Het. Suppl. i. p. 5 (1889); Dyar, Cat. Lep. N. Am. p. 105. ? near *A. velia*. Illinois.

„ *literata*, Brem. Lep. Ost-Sib. p. 102, pl. 8. f. 14 (1864); Staud. Cat. Lep. pal. p. 133. ? = *senica*.. E. Siberia.

„ *pfizenmayeri*, Herz, Ann. Mus. St. Pétersb. viii. p. 75 (1903). N. Siberia.

„ *terrigena*, Græs. Berl. ent. Zeit. xxxvii. p. 214 (1892); Staud. Cat. Lep. pal. p. 132. ? = *A. strigosa*. E. Siberia.

Acronycta x-signata, Staud. Iris, x. p. 329, pl. 9. f. 24 (1897); id. Cat. Lep. pal. p. 133. ? near *senica* .. E. Siberia.

Apamea pullata, Berg. Ann. Soc. Argent. xix. p. 270 (1885). Argentina.

Argyrospila formosa, Græs. Berl. ent. Zeit. xxxii. p. 345 (1888); Staud. Cat. Lep. pal. p. 189 ..... E. Siberia.

? *Basilodes albigutta*, Herr.-Schäff. Corresp.-Blatt. zool.-min. Verh. Regensb. xxii. p. 181 (1868) ..... Cuba.

? *Basilodes fastigiata*, Herr.-Schäff. Corresp.-Blatt. zool.-min. Verh. Regensb. xxii. p. 181 (1868) ..... Cuba.

? *Basilodes tristriga*, Herr.-Schäff. Corresp.-Blatt. zool.-min. Verh. Regensb. xxii. p. 181 (1868) ..... Cuba.

Bryophila albistigma, Moore, P. Z. S. 1867, p. 45; Hmpsn. Moths Ind. ii. p. 299. Type lost ..... Bengal.

„ *amœnissima*, Turati, Nat. Sicil. xxi. p. 86, pl. 1. ff. 14, 15 (1909)..... Italy.

„ *conspersa*, Christ. Iris, vi. p. 89 (1892); Staud. Cat. Lep. pal. p. 167 ..... W. Turkestan.

„ *corticosa*, Guen. Noct. i. p. 30 (1852); Smith, Cat. Noct. N. Am. p. 49 ..... U.S.A.

„ *duskei*, Christ. Iris, vi. p. 89 (1892); Staud. Cat. Lep. pal. p. 167 ..... Armenia.

„ *idonea*, Christ. Iris, vi. p. 89 (1892); Staud. Cat. Lep. pal. p. 166 ..... W. Turkestan.

„ *metallica*, Lucas, Pr. R. Soc. Queensl. xiii. p. 72 (1898). Queensland.

„ *præcana*, Christ. Iris, vi. p. 89 (1892); Staud. Cat. Lep. pal. p. 166 ..... W. Turkestan.

„ *protracta*, Christ. Iris, vi. p. 90 (1892); Staud. Cat. Lep. pal. p. 166 ..... W. Turkestan.

„ *seladona*, Christ. Rom. Mém. ii. p. 28, pl. ii. f. 4 (1885). Transcaucasus.

„ *vegetata*, Lucas, Pr. R. Soc. Queensl. xvi. p. 82 (1901). Queensland.

Bryophilina blandula, Staud. Rom. Mém. vi. p. 398, pl. 5. f. 11 (1892); id. Cat. Lep. pal. p. 168. ? near *Monodes*. E. Siberia.

Calamia suffusa, Lucas, P. Linn. Soc. N.S.W. (2) viii. p. 142 (1894). Victoria.

Callopistria miracula, Herz, Ann. Mus. St. Pétersb. ix. p. 284, pl. 1. f. 10 (1904) ..... Corea.

„ *promiscua*, Saalm. Lép. Madag. p. 490, f. 172 (1891). Madagascar.

„ *rectilinea*, Saalm. Lép. Madag. p. 374 (1891). Madagascar.

„ *strena*, Grote, Abh. Nat. Ver. Bremen, xiv. p. 117 (1895); Dyar, Cat. Lep. N. Am. p. 216.. Arizona.

Calymnia spurcopyga, Alph. Iris, viii. p. 194 (1895); Staud. Cat. Lep. pal. p. 203..... Mongolia.

Caradrina alana, Druce, P. Z. S. 1890, p. 513; id. Biol. Centr.-Am., Het. ii. p. 481, pl. 94. f. 1. ? = *Eriopyga iole*, Schaus. Panama.

„ *asinina*, Saalm. Lép. Madag. p. 277 (1891). Madagascar.

„ *bistrigata*, Brem. & Grey, Lep. N. China, p. 10 (1853). N. China.

„ *derogata*, Wlk. xxxii. 687 (1865). Type lost.. India.

„ *dubitata*, Mssn. Stübel's Reise, p. 141, pl. 6. f. 22 (1890). ? *Lycophotia* ..... Colombia.

„ *mendica*, Mssn. Stübel's Reise, p. 142, pl. 6. f. 17 (1890). ? *Lycophotia*... ..... Ecuador.

„ *murcida*, Wllgrn. Öfv. Vet.-Akad. Förh. 1875, p. 107. ? *Agrotis* or *Tathorhynchus* ..... Transvaal.

„ *pallidula*, Saalm. Lép. Madag. p. 278 (1891). Madagascar.

„ *promiscua*, Möschl. Abh. Senck. Ges. xvi. p. 144 (1890). Porto Rico.

„ *tolima*, Mssn. Stübel's Reise, p. 141, pl. 6. f. 15 (1890). ? *Lycophotia* ..... Colombia.

Celæna intractata, Wlk. Entom. v. p. 127 (1870). Type lost. Arabia.

„ *plagifera*, Wlk. Entom. v. p. 127 (1870). Type lost. Arabia.

Chariclea hedemanni, Staud. Rom. Mém. vi. p. 552 (July 1892); id. Cat. Lep. pal. p. 223. = *Chariclea erubescens*, Græs. Berl. ent. Zeit. xxxvii. p. 229 (Aug. 1892). E. Siberia.

Cœnagria nana, Staud. Rom. Mém. vi. p. 473 (1892); id. Cat. Lep. pal. p. 188 ..... E. Siberia.

Comophorus villosus, Alph. Stett. ent. Zeit. 1887, p. 169; id. Rom. Mém. v. p. 148, pl. 6. f. 6; Staud. Cat. Lep. pal. p. 154. ? *Agrotinæ* gen. *Episilia* ..... Centr. Asia.

Cosmia foveata, Pag. Jahr. Nass. Ver. xli. p. 130 (1888). Type Coll. Staudinger in Mus. Berlin ..... Amboina.

„ *pembertoni*, Holl. Trans. Am. Ent. Soc. xvi. p. 75 (1889). ? near *Calymnia cara* ..... Japan.

„ *trapezoides*, Staud. Stett. ent. Zeit. 1882, p. 45; id. Rom. Mém. vi. p. 509, pl. 9. f. 7; id. Cat. Lep. pal. p. 204. ? *Cucullianæ* gen. *Cosmia*. W. Turkestan, E. Siberia.

„ *vulpecula*, Ev. Bull. Mosc. 1852, i. p. 150, & 1855, iv. p. 391; Staud. Cat. Lep. pal. p. 193. ? *Leucania*. Russia.

Deva ornata, Ottolengui, Can. Ent. xxx. p. 106, pl. 5. f. 1 (1898); Dyar, Cat. Lep. N. Am. p. 198. ? *Chalcopasta*, sect. with long upturned palpi..... New Mexico.

Dianthœcia glebosa, Saalm. Lép. Madag. p. 306, pl. xiii. f. 253 (1891). ? *Perigea*..... Madagascar.

Epimecia balestrei, Lucas, Bull. Soc. Ent. Fr. 1907, p. 181. Tunis.

Episamia deserticola, Staud. Stett. ent. Zeit. 1879, p. 320; id. Cat. Lep. pal. p. 190. ? near *Arenostola* ..... Russia.
Eriopus ganga, Guen. Noct. ii. p. 293 (1852) ..... Hab. ign.
„ *granitosa*, Guen. Noct. ii. p. 295 (1852); Smith, Cat. Noct. N. Am. p. 308 ..... U.S.A.
Euplexia morosa, Wlk. Char. Undescr. Het. p. 33 (1869). Type lost ..... Hab. ign.
Galgula pectinata, Herr.-Schäff. Corresp.-Blatt. zool.-min. Regensb. xxii. p. 135 (1868) ..... Cuba.
Hadena ænea, Saalm. Lép. Madag. p. 315, pl. xi. f. 205 (1891). ? *Perigea* ..... Madagascar.
„ *dorriesi*, Staud. Iris, x. p. 336, pl. ix. f. 26 (1897); id. Cat. Lep. pal. p. 174. ? *Parastichtis* ..... E. Siberia.
„ *figurata*, Wlk. xxxiii. 743 (1865). Type lost. Hab. ign.
„ *frigida*, Zett. Ins. Lapp. p. 939 (1840). ? = *Lasiestra dovrensis*, Staud. ..... Norway, Lapland.
„ *fusifasciata*, Wlk. xxxiii. 731 (1865). Type lost. S. Africa.
„ *intonsa*, Berg, Bull. Mosc. xlix. iii. p. 215 (1875). Patagonia.
„ *juvenilis*, Mssn. Stübel's Reise, p. 145, pl. vi. f. 30 (1890). Ecuador.
„ *ligata*, Möschl. Abh. Senck. Ges. xvi. p. 130 (1890). Porto Rico.
„ *loda*, Streck. Lep. Rhop. & Het. Suppl. i. p. 8 (1898); Dyar, Cat. Lep. N. Am. p. 115. ? *Eumichtis* closely allied to *E. ducta* fide J. B. Smith ..... Washington.
„ *mamestroides*, Wlk. xxxiii. 732 (1865). Type lost. S. Africa.
„ *moilena*, Streck. Lep. Rhop. & Het. Suppl. i. p. 8 (1898); Dyar, Cat. Lep. N. Am. p. 115. ? = *Eumichtis ducta*, Grote ..... Colorado.
„ *regressa*, Möschl. Verh. z.-b. Ges. Wien, xxx. p. 381 (1880) ..... Surinam.
„ *statiuncula*, Möschl. Verh. z.-b. Ges. Wien, xxx. p. 381 (1880) ..... Surinam.
„ *timida*, Staud. Stett. ent. Zeit. 1888, p. 26; id. Cat. Lep. pal. p. 172 ..... W. Turkestan.
„ *transcursa*, Saalm. Lép. Madag. p. 319 (1891). Madagascar.
Hydrœcia lampadifera, Wlk. xxxii. 643 (1865). Type lost. Ceylon.
„ *naxiaoides*. Moore, P. Z. S. 1867, p. 50 ..... Bengal.
Hyppa spaldingi, Smith, J. N.Y. Ent. Soc. xvii. p. 59 (1909). Utah.
Jaspidia jankowskii, Alph. Rom. Mém. ix. p. 160, pl. 11. f. 6 (1897); Staud. Cat. Lep. pal. p. 186. ? *Euplexia*. E. Siberia.
Laphygma obstans, Wlk. xxxii. 653 (1865). Type lost. Ceylon.
„ *trajiciens*, Wlk. xxxii. 653 (1865). Type lost. Ceylon.

Leucanai lacteola, Christ. Iris, vi. p. 92 (1893); Staud. Cat. Lep. pal. p. 194. ? *Sesamia* ..... Armenia.
Lithophasia venosula, Staud. Iris, iv. p. 305, pl. 4. f. 3 (1891); id. Cat. Lep. pal. p. 212. ? *Cucullianæ* near *Calophasia*. Syria.
Luperina bugnioni, Boisd. Ind. Meth. p. 115 (1840); Guen. Noct. i. p. 192. Non descr. ..... Switzerland.
„ *impedita*, Christ. Rom. Mém. iii. p. 74, pl. 4. f. 2 (1887); Staud. Cat. Lep. pal. p. 170. ? *Pseudohadena*. W. Turkestan.
„ *malitiosa*, Alph. Hor. Soc. Ent. Ross. xxvi. p. 448 (1892); id. Rom. Mém. ix. p. 25, pl. 2. f. 5; Staud. Cat. Lep. pal. p. 168. ? *Centropodia* near *inquinata*. E. Turkestan.
„ *pozzii*, Curó, Bull. Ent. Ital. xv. pp. 296–8 (1883). Italy.
Mamestra sylvicola, Ev. Bull. Mosc. 1843, iii. p. 547; Staud. Cat. Lep. pal. p. 173 ..... Urals, W. Turkestan.
Meristis umbripennis, Strand. Iris, 1909, p. 114. Germ. E. Africa.
Mesotrosta imprimata, Möschl. Abh. Senck. Ges. xvi. p. 163 (1890). Porto Rico.
„ *incerta*, Staud. Rom. Mém. vi. p. 572 (1892); id. Cat. Lep. pal. p. 233 ..... E. Siberia.
Metoponia gratiosa, Staud. Iris, iv. p. 325 (1891); id. Iris, vi. pl. 1. f. 11; id. Cat. Lep. pal. p. 233 ..... Syria.
Miana adatricula, Guen. Noct. i. p. 218 (1852) .... Abyssinia.
Nœnia cuprea, Moore, P. Z. S. 1867, p. 64; Hmpsn. Moths Ind. ii. p. 190. Type lost ..... Bengal.
Noctua albipes, Fabr. Ent. Syst. 3, 2. p. 89 (1794). Type lost. E. Indies.
„ *beltis*, Cram. Pap. Exot. iv. p. 223, pl. 396. f. J. (1782). ? *Eriopus* ..... Surinam.
„ *carbunculus*, Herr.-Schäff. Aussereur. Schmett. f. 214 (1858). ? *Miselia* ..... Venezuela.
„ *dimidiata*, Fabr. Suppl. Ent. Syst. p. 446 (1798). Type lost ..... Tranquebar.
„ *lyctorea*, Herr.-Schäff. Aussereur. Schmett. f. 570 (1869). ? *Heterochroma* ..... Venezuela.
„ *tessellata*, Sepp, Ins. Surinam, pl. 77 (1848). ? *Cropia*. Surinam.
Nonagria lineosa, Mssn. Stübel's Reise, p. 139, pl. vi. f. 3 (1890). Ecuador.
„ *monilis*, Mssn. Stübel's Reise, p. 140, pl. vi. f. 10 (1890). Ecuador.
„ *ossea*, Guen. Noct. i. p. 109 (1852) ..... Brazil.
Perigea adornata, Wlk. xxxii. 681 (1865). Type lost. Brazil.
„ *furtiva*, Guen. Noct. i. p. 231 (1852). ? = *Perigea xanthioides* ..... ? Brazil.
Placodes fuscomaculata, Brem. & Grey, Beitr. Schmett. N. China, p. 10 (1853) ..... N. China.

Polia maura, Saalm. Lép. Madag. p. 308. f. 235 (1891). ? *Laphygma* ..... Madagascar.

„ *vesperugo*, Ev. Bull. Soc. Mosc. 1856, ii. pl. 2. f. 6, & iii. p. 48; Staud. Cat. Lep. pal. p. 172. ? *Eremobia* or *Agrotid* ..... S.E. Siberia.

Polyphænis nona, Möschl. Abh. Senck. Ges. xvi. p. 131 (1890). ? *Neophænis* ..... Porto Rico.

Rusina ripleyi, Holland, Trans. Am. Ent. Soc. xvi. p. 74 (1889). Japan.

Segetia mersa, Morr. Proc. Bost. Soc. N. H. xviii. p. 120 (1875); Smith, Cat. Noct. N. Am. p. 155. ? near *Perigea albolabes* ..... California.

„ *proxima*, Morr. Proc. Bost. Soc. N. H. xviii. p. 240 (1875); Smith, Cat. Noct. N. Am. p. 155. ? = *Perigea concisa*. Texas.

Senta nigrosignata, Græs. Berl. ent. Zeit. xxxii. p. 344 (1888); Staud. Cat. Lep. pal. p. 189..... E. Siberia.

Sesamia bombiformis, Wllgrn. Wien. Ent. Mon. iv. p. 170 (1860). Argentina.

Stylopoda auxia, Smith, J. N.Y. Ent. Soc. xvi. p. 96 (1908). New Mexico.

Tapinostola improba, Staud. Iris, xii. p. 343 (1899); id. Cat. Lep. pal. p. 189 ..... E. Turkestan.

„ *insularis*, Herr.-Schäff. Corresp.-Blatt zool.-min. Verh. Regensb. xxii. p. 148 (1868) ..... Cuba.

„ *taurica*, Staud. Iris, xii. p. 374 (1899); id. Cat. Lep. pal. p. 189 ..... Asia Minor.

Tringilburra lugens, Lucas, Pr. R. Soc. Queensl. xvi. p. 81 (1901). Queensland.

Victrix karsiana, Staud. Hor. Soc. Ent. Ross. xiv. p. 490, pl. 3. f. 2 (1878); id. Cat. Lep. pal. p. 168. ? = *Hypostilbia correpta* ..... Armenia.

Xylina senica, Ev. Bull. Mosc. 1856, ii. pl. 3. f. 7, & 1857, i. p. 85; Staud. Cat. Lep. pal. p. 131. ? *Acronycta*. Urals & Altai.

Xylophasia patagonica, Berg, Bull. Mosc. xlix. pt. 2, p. 217 (1875). ? *Cucullia* or *Calophasia* ..... Patagonia.

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[Synonyms are printed in *italics*.]

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